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JANUARY  
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VOL. LXXII  
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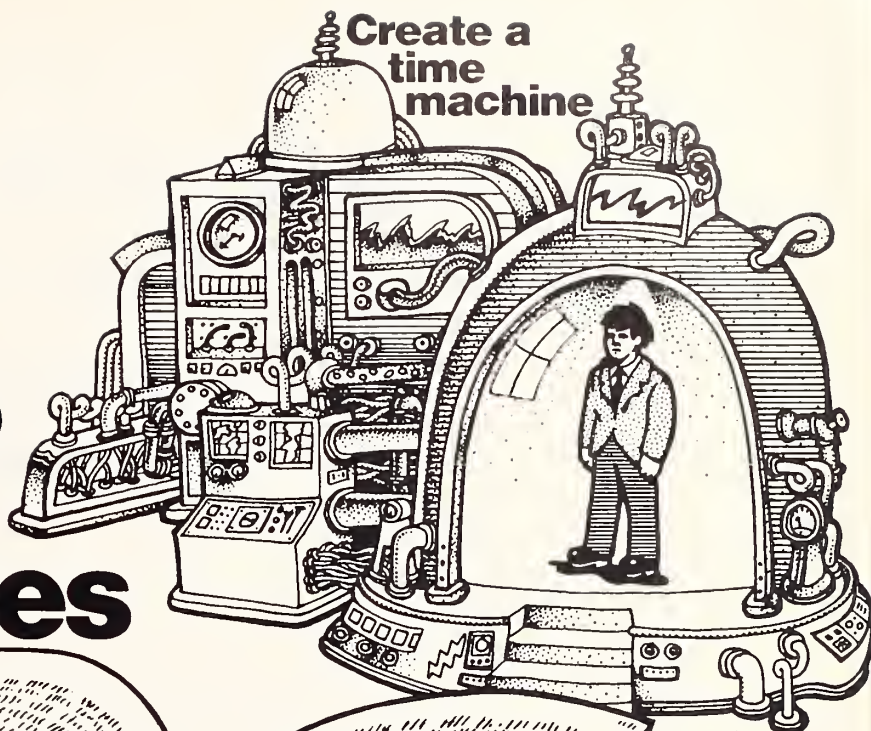
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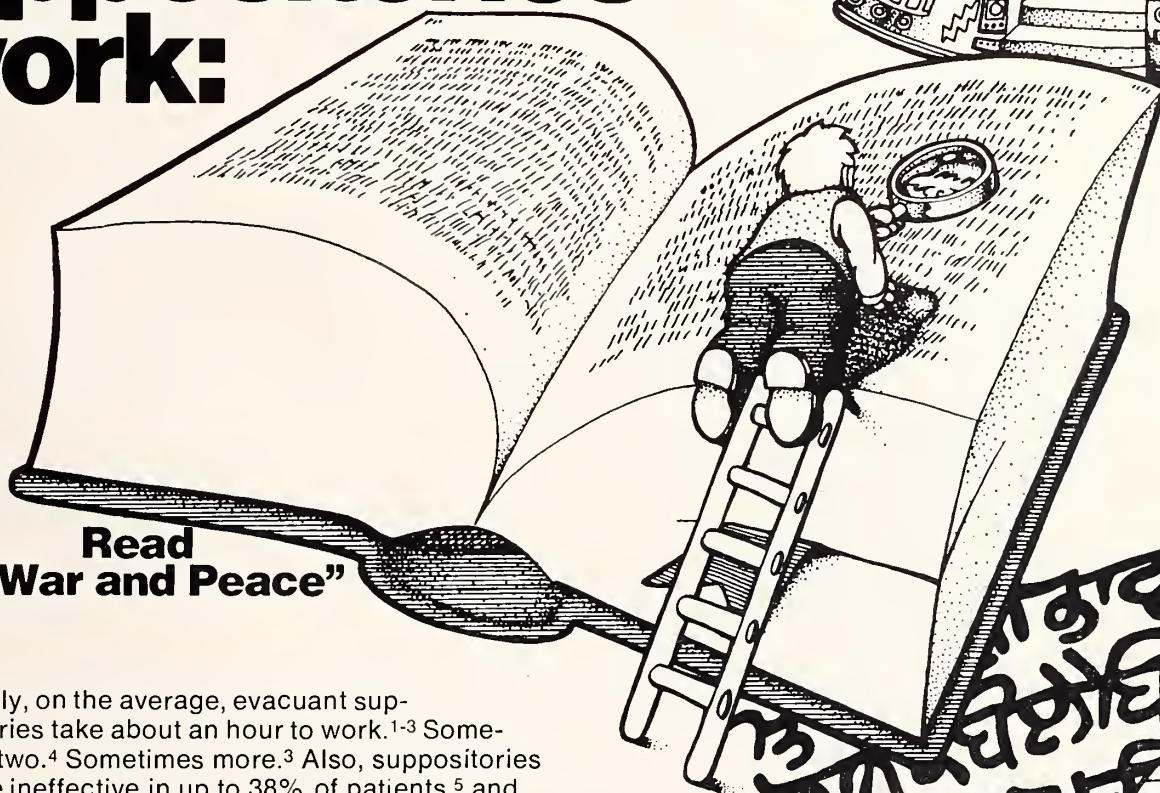
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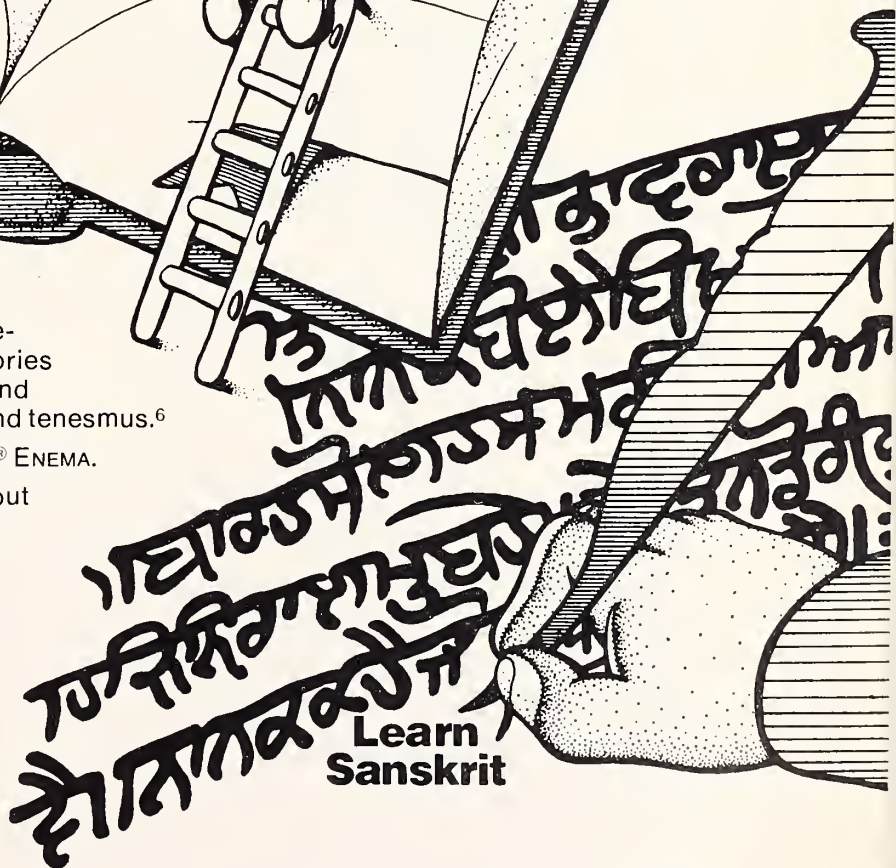
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**References:** 1. Blumberg, N.: Med Times 91:45, Jan., 1963. 2. Sweeney, W. J., III: Amer J Obstet Gynec 85:908, Apr. 1, 1963. 3. Weinsaft, P.: J Amer Geriatr Soc 12:295, Mar., 1964. 4. Baydoun, A. B.: Amer J Obstet Gynec 85:905, Apr. 1, 1963. 5. Feder, I. A., Flores, A. and Weiss, J.: Amer J Gastroent 33:366, Mar., 1960. 6. Smith, J. J. and Schwartz, E. D.: Western J Surg 72:177, May-June, 1964.



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# The JOURNAL of the KANSAS MEDICAL SOCIETY

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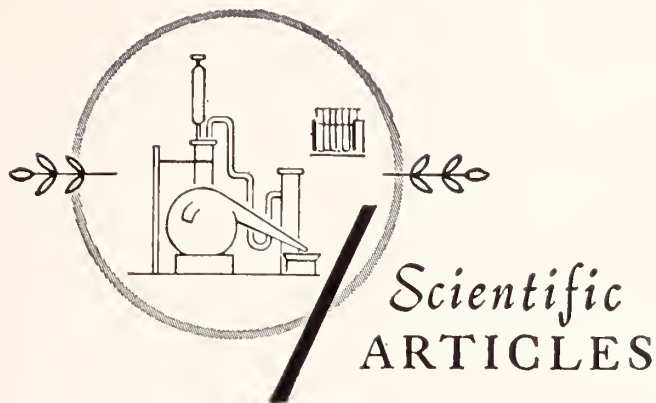
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# Family Medicine

## *What Is It?*

**WILLIAM L. STEWART, M.D.,\*** *Baltimore, Maryland*

I SUPPOSE THAT THE question that I am asked most often is "What is family medicine?" This specialty differs from other specialties in that it is defined in terms of functions performed rather than limited by treatment of certain diseases or parts of the body or on the basis of the patient's chronological age. What another specialist may bring to the patient in terms of intense concentration on a single clinical area, the specialist in family practice brings to the patient in terms of his clinical and sociologic overview. He is engaged in a specialty in breadth rather than a specialty in depth.

Family practice, then, may be defined as that aspect of medical care performed by a doctor of medicine who assumes comprehensive and continuing responsibility for the patient and his family regardless of age. Comprehensive medical care implies direct service over broad areas of medicine and the availability of this broad service to all patients. Continuity of care implies that the physician will accept overall responsibility for his patients' care over extended periods of time.

In order to understand the development of family medicine as a specialty, it is necessary to be aware of the reports of four national commissions that dealt with this subject. It is interesting that all of these reports appeared within a period of one year.

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\* Head, Division of Family Medicine, University of Maryland School of Medicine, Baltimore.

Presented at the 111th annual meeting of the Kansas Medical Society, May 5, 1970, Wichita.

I am sure that many of you are familiar with the Millis report because this touched on many aspects of graduate medical education in addition to family medicine. It might be well to quote pertinent statements from this document concerning the qualifications for the role to be filled by the family physician:

"Many leaders of medical thought have proclaimed the desirability of training physicians who are able and willing to offer comprehensive medical care of a quality far higher than that provided by the typical general practitioner of the past. The physician they conceive of is knowledgeable—as are other physicians—about organs and systems and techniques, but he never forgets that organs and systems are parts of a whole man, that the whole man lives in a complex social setting, and that diagnosis or treatment of a part, as if it existed in isolation, often overlooks major causative factors and therapeutic opportunities.

"What is wanted is comprehensive and continuing health care, including not only the diagnosis and treatment of illness but also its prevention and the supportive and rehabilitative care that helps a person to maintain or to return to as high a level of physical and mental health and well-being as he can attain. Neither the hospital nor any of the existing specialists is willing, equipped, or able to assume this comprehensive and continuing responsibility; and too few of the present general practitioners are qualified to do so. A different kind of physician is called for."

The second report, the so-called Folsom report, was

sponsored by the American Public Health Association and the National Health Council. This report dealt with the patient's access to medical care in the following terms:

"Every individual should have a personal physician who is the central point for integration and continuity of all medical and medically related services to his patient. Such a physician will emphasize the practice of preventive medicine, both through his own efforts and in partnership with the health and social resources of the community.

"He will be aware of the many and varied social, emotional and environmental factors that influence the health of his patient and his patient's family. He will either render, or direct the patient to, whatever services best suit his needs. His concern will be for the patient as a whole and his relationship with the patient must be a continuing one."

The third report, known as the Willard report, also defines the role of the family physician in rather specific terms:

"The family physician is the first medical contact for patients, facilitating their access to medical care and to the whole health care system. Because of his intimate relationship with the patient and his family, which grows with time, it is easy for the patient to contact him, and to obtain medical care.

"He takes positive action to see that his patients' medical care needs are met. He helps to remove barriers—barriers of all kinds—economic, emotional, social and occupational, and he minimizes as much as possible the disruption in the patients' way of life caused by illness.

"The family physician, himself, provides a major portion of medical care." Parenthetically, I would like to say here that numerous studies have shown that the family physician is perfectly capable of adequately taking care of 85 to 90 per cent of the patients he sees. "He identifies the emergency or urgent problems of his patients and takes the necessary steps to solve them. As the primary physician, he is in an excellent position to detect the earliest onset of disease or functional abnormality.

"As he acquires a continuing and stable relationship with his patients, he becomes highly effective in dealing with their frequent emotional problems and with the social dimensions of their illnesses. Because of his prior and continuing knowledge of his patients' problems, there is less need to carry out or repeat many diagnostic procedures. There may be less need to hospitalize patients.

"The family physician is the key to the referral process for problems beyond his scope of practice and competence. Ideally, patients should gain access

to all of their specialty care through the family physician.

"Effective referrals and the use of consultation services require skill which the family physician must acquire through training and practice. This is a much more difficult and important function than service as a triage officer.

"The family physician provides leadership for the many allied personnel who offer services for his patients. There will be many occasions where his patients will need the professional services of a physical therapist, a public health nurse, a social worker or some other health worker. The family physician helps to mobilize these resources to provide whatever services his patients may need. To do this effectively, he must understand the training and skills of other professional and technical personnel and must know how persons in the allied health fields can best contribute to the care of his patients."

The final document to appear in 1966 was the Core Content of Family Medicine. This report covered not only the clinical aspects of family practice but also the sociological, ethical, legal, administrative and economic aspects.

All four reports concur that success will require significant reorientation of medical education and change in the attitudes of the medical profession. Preparation of a sufficient number of family physicians to serve the American public is a major undertaking and cannot be accomplished quickly. Adequate financial resources and incentives are essential. In this connection, the government is showing signs of diverting more funds to the delivery of health care. This is probably best demonstrated by the simultaneous introduction of the Yarborough Bill in the United States Senate and the Rooney Bill in the House of Representatives. These bills are identical, and if they are passed and funded, they will provide a total of 425 million dollars over a period of five years for the development of family practice programs in both medical schools and community hospitals. Interestingly enough, both of these bills were introduced into Congress on February 9, 1970, the first anniversary of the American Board of Family Practice.

So far the public has been vociferous in its demands for more family physicians and both the government and medical schools seem to be responding to this pressure. Thirty, or approximately one third of the existing medical schools are developing new divisions or departments of family medicine, and many others are looking at the possibility of doing this. I think that one of the big hang-ups is the equating of general practice and family practice. General practice is disease oriented and care is rendered



on an episodic basis. No attempt is being made to resurrect this type of practice. We want to train a physician who is oriented to continuing supervision for the comprehensive health care of the individual and his family. The graduate programs in the past have mitigated against training this type of individual. If he became a family physician, it was by virtue of this interest and experience, not because of his training program. It should be noted also that many other specialists, particularly internists and pediatricians, have become excellent family physicians, again, either because of interest or because the role was forced on them. The point is that in the past no one was trained specifically for this role. Now it seems to me that there were several things which happened to a general practitioner after he entered practice, all of which combined to make him a family physician. First, he followed a patient for a long period of time. This was something that never occurred in medical school or during his internship. This allowed a relationship to develop which is almost never seen in a hospital clinic. Secondly, he came to recognize the family rather than the individual patient as the unit of health care. He rapidly discerned that it was often the family who defined illness and decided whether or not to accept the physician's diagnosis and treatment. Thirdly, he came to "care," in the true sense of the word, for his patients. This empathy is impossible to develop on an episodic basis. And, lastly, he learned to use the present illness to practice preventive medicine.

Let us now look for a moment at the program to train the type of physician we have just described. It seems obvious that part of the training of the future family physician should take place in the undergraduate years. Ideally, the first year, an hour or two should be spent in the model family unit on a weekly basis. Here, the student would have patient contact. He would learn interviewing techniques. He would have exposure to the doctor-patient relationship. And, most important, he would have the clinical correlation which would provide the relevancy so sought after today. Ideally, the student in the first year should be assigned a family or families to be followed for his entire medical school career. Appointments for the members of the family should be made to coincide as nearly as possible with the student's schedule. Conferences and seminars involving the family practice faculty and other departments, particularly psychiatry and sociology, would be beneficial.

The second year, the student should participate in the family practice model unit in greater depth, not just as an observer, which is about all that he is capable of the first year. Some time this year might

well be spent in a study of community health resources in conjunction with the department of preventive medicine.

The third year, the student should be offered a clinical clerkship either in the university hospital or an affiliated hospital. Here he will participate in the care of patients hospitalized from the family practice unit as well as those patients assigned to the family practice house officer.

The fourth year should be spent in a very carefully controlled preceptorship program or alternatively he may elect to spend more time in the model family practice unit. A few students could be selected for a research project involving some aspect of the delivery of health care.

Let us now turn our attention to the family practice residency. Before describing our program at the University of Maryland it might be well to briefly review the "Essentials of a Family Practice Residency" as approved by the Council on Medical Education of the AMA. We can see that the duration of the program is a total of three years following graduation from medical school. It is interesting that special emphasis is laid on the family practice resident retaining his identity throughout his graduate training period. The "Essentials" also specifically provide that the resident care for a group of patients under the supervision of experienced family physicians.

The family practice unit should consist of a clinical service. The patient composition should be such that continuity of care is assured. Care should be provided in the hospital, the family practice unit, the patient's home, and the nursing home. Emphasis should be placed on the ambulatory patient and diseases of high prevalence, patients with long-term illness and those with problems of adjustment, anxiety, depression and other emotional stresses. Preventive medicine, health maintenance, rehabilitation counseling and the use of all relevant community resources should also be stressed.

Internal medicine provides a major foundation for family practice. Here the resident should develop judgment in assessing the condition of the patient, in the use and interpretation of laboratory procedures and in applying the principles of differential diagnosis, as well as proper therapeutic management of the patient. Emphasis should be placed upon the history and cause of disease. The resident should become familiar with the major causes of disease and the principles of rational therapy.

Pediatrics should provide an understanding of problems of the newborn, congenital malformation, growth and development through adolescence, nutrition, mental retardation and the behavioral and emotional problems of children and their manage-

ment. Emphasis should be placed on preventive medicine and the diagnosis and treatment of infectious diseases. The position of the child in the family, school, and community should also be stressed.

Psychiatry should provide the resident with an ability to diagnose and manage the common psychosomatic and emotional problems with which he will be faced in his future practice. Insofar as possible this training should be integrated with medicine, pediatrics, and other disciplines.

Obstetrics and gynecology should provide the resident with an understanding of the psychological impact of pregnancy, delivery, and care of the newborn, upon a woman and her family. He should be able to provide antepartum and postpartum care. He should be competent to perform normal deliveries and should be able to recognize the complications of pregnancy. He should be adept at sex education and marriage counseling. Skill in managing office gynecological problems is also a necessity.

The resident should be adept at recognizing surgical emergencies. He should have a knowledge of surgical procedures but should only be trained to perform those procedures that he will be called upon to perform in the community in which he will practice. If he expects to include major surgery as a part of his regular practice, he should obtain additional training.

Community medicine is one of the unique components of family practice. The resident should receive training in epidemiology and environmental health. He should be familiar with the health resources of the community and should gain experience in mobilizing them for the aid of his patient. He should appreciate the roles of persons in the various professional and technical disciplines which provide health services. In order to discharge his integrative functions he should be provided with training in the social and behavioral sciences.

Electives should provide the resident with experience in other specialties such as anesthesiology, radiology, dermatology, ENT, ophthalmology, urology, orthopedics, etc. This experience may be acquired through electives, included directly in the curriculum, or obtained through proper utilization of consultations.

The resident should be encouraged to carry out a research project in some aspect of the delivery of health care.

We have spent considerable time developing the internship and residency program at the University of Maryland. Happily, ours was one of the first ten programs approved by the Council on Medical Education of the AMA. The heart of the program is the model family practice unit. This is where the house officer has his identity and this is where he sees a model to emulate. It is obvious that this must re-

semble a private office much more than our traditional, hard-bench clinic. If the house officer is to develop true rapport with his patient, he must be given the proper surroundings in which to do this and the patient must have scheduled appointments which are adhered to.

The first year, or internship year, the house officer spends most of his time taking care of hospitalized patients. Here he learns the skills and techniques of the traditional disciplines. The first year the intern spends six months in the department of medicine. His time is divided into three months on the service wards, two months on the private service, and one month in the intensive care unit. Half of this time is spent at the university hospital and half at an affiliated community hospital. He also spends four months in the department of pediatrics. Here he spends one month in the newborn nursery, one month on the infant ward, one month on the children's ward and one month in the pediatric emergency room and outpatient department. The final two months are spent in the adult emergency room. Here he learns the primary care of both medical and surgical emergencies. He also becomes adept at cardiopulmonary resuscitation. Now, what makes this different from the traditional rotating internship is the fact that the intern spends one afternoon per week in the model family practice unit. Here he is assigned 50 families representative of all age groups. He continues to care for these families the entire three years. As he spends more time in the family practice unit, he is assigned proportionately more patients.

The second year, the resident spends two months on obstetrics and gynecology in both inpatient and outpatient areas. After this, the remainder of the year is spent treating ambulatory patients, except for those patients who are hospitalized from the family practice unit. The resident spends two sessions per week in medical and pediatric subspecialty clinics where emphasis is placed on the longitudinal study of a few representative patients with chronic diseases rather than merely seeing a number of isolated cases. The specialty clinics rotate every three months. One day per week is spent in a community mental health center. This provides improved medical care for patients in these facilities and also provides the resident with experience in mental health. Weekly conferences are held under the supervision of the department of psychiatry. One seminar per week is held on topics in preventive medicine. This includes such topics as epidemiology, biostatistics, and decision-making on the basis of probability theory and biological experience. A weekly seminar is devoted to the organization and systems of delivery of health care. Biweekly seminars are held on research in education. The remainder of these seminars are devoted



to the medical audit. This year the resident spends four sessions per week in the model family practice unit. He also spends one session per week in the triage center. Four months of elective time are provided this year. The resident may elect to spend part of this time in the family practice center at the York Hospital, an affiliated community hospital in York, Pennsylvania. He is also expected to utilize part of his free time in various subspecialty areas such as GU, orthopedics, ENT, ophthalmology, etc. He may also utilize this time to work on his required research project in some aspect of the delivery of health care.

The third year, the resident continues to spend one half day per week in a community mental health center. He also has exposure to the behavioral sciences. This is accomplished by weekly seminars covering such topics as cultural anthropology, sociology, psychology, etc. Topics in community and preventive medicine are covered in twice weekly seminars. In addition to this, since most of the graduates of this program will enter private practice, a weekly seminar on various aspects of office management is held. The resident now spends five sessions per week in the family practice unit. He also continues to spend one session per week in each of two different subspecialty clinics, rotating every three months. He spends one session per week in ambulatory surgery. Here he learns minor office surgical procedures. In addition to this, he spends one session per week in the rehabilitation clinic. This final year the resident is provided with three months of elective time. This may be spent at the York Hospital or a four to eight week period may be spent in a carefully supervised preceptorship program in a group practice. The resident may utilize this time in subspecialty clinics or on the wards at the university hospital. He is also expected to complete his research project during this time.

Now, for a moment, let us look at some problem areas. Our family practice unit at the present time is located in our outpatient department. This building was erected in 1832 and looks every day of it. The medical school itself is located in an industrialized urban ghetto. In any one year, 20 per cent of the

people living within the shadow of the medical school move. This means that virtually the entire population changes every five years. There is no precedent here for family care and preventive medicine. Indeed, except for the welfare patient, the very fee schedule in our outpatient department mitigates against this type of care. For this reason, this summer we are moving out of the medical school setting into a community in northeast Baltimore. Here, there is a better economic cross section and a more stable community. We will also be able to recreate a more realistic office atmosphere. Fortunately, our new dean is supportive of the concept of a satellite unit.

Before closing, I would like to make a few comments concerning student interest. I have been full time at the university for almost two years now. When I first started, out of a graduating class of 136, we only had one or two students a year entering general practice. They always went elsewhere for their training. This year we still only have three students going into family practice but they are staying at our own institution. Prior to this, our old general practice residency had gone unfilled for the past eight years. In our present third year class, where we had been able to have more influence, there are approximately 15 students firmly committed to a career in family medicine at this time. Another indication of student interest is the number of students taking electives in family medicine. A final indication is our family practice club. We started this recently at our school. We have an evening meeting every other month. The students pick the topic that they want discussed. A guest speaker is invited, and a panel composed of family physicians relates the speaker's remarks to family practice. At our first meeting we had an attendance of 65. At our last meeting we had 162.

In conclusion, I would like to paraphrase the words of Dean Dennis of the University of Oklahoma School of Medicine. The family physician must become the expert on what the public and his patients want. Public demand and student interest are potent forces that augur well for the success of the new specialty of family medicine.

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# Tolerance for Turbulence

## *The Fallacy of Peaceful Change*

DARREL J. MASE, Ph.D.,\* *Gainesville, Florida*

YOUR INVITATION to come home to Kansas was appreciated, and I welcome this opportunity to share with you some ideas about the Fallacy of Peaceful Change, or Tolerance for Turbulence. It pleases me that this meeting of the Kansas Medical Society has recognized the field of allied health in its 1970 program. It has been my privilege and a most exciting, challenging and satisfying experience to work with medicine for some 30 years.

I have seen much of Wichita in the past years as I have come frequently to serve as a consultant to the Institute of Logopedics. Since the untimely death of the founder of this service program for those with communicative disorders, it has been my privilege to serve on a continuing basis to the institute. This relationship has permitted me to work closely with administrators and faculty of Wichita State University in respect to the Department of Logopedics in the College of Education and with other developing programs.

Congratulations are due to Wichita State University for receiving state support in these difficult times to develop a College of Health Related Professions. As you know, the college will be directed by Dr. Cramer Reed, whose competent leadership will hasten the placement of supportive health personnel and will improve the delivery of health care. I urge you to work closely with him regarding the allied health personnel you need to assist you.

More and more people feel they must now go to college in order to maintain social respectability. Whether by design or accident, this pressure also functions to insure minimal unemployment at any one time. In the past there were Civilian Conservation Camps to keep people off the unemployment rolls. Today we retire people earlier and keep them in college longer so as not to have too many unemployed. Apparently we must be at war or preparing for war, or else have more than 5 per cent unemployed regardless of university and retirement efforts. General education has been extended to 14 years with the advent of the junior colleges—over eleven hundred in the United States now, with ap-

proximately 400 or more to be established. It is estimated that by 1975, 80 per cent of our high school graduates will go on to college. With this pressure to keep students in school, I am just old-fashioned enough to suggest that it might be wise to teach them how to do something and how to earn a living while they are there. This may not be a very popular concept, but somehow with my Kansas farm-boy heritage, I still pursue the point. The interweaving of the commitment to advanced education for a large segment of our youth, the demand for extended health care services, and the potential of our societal shifting economic base, all generate stimuli to which a College of Health Related Professions is uniquely prepared to respond creatively.

Why a college of this nature? Perhaps the situation would be better understood if seen in the perspective of the development of the College of Health Related Professions at the University of Florida. I went to the University in 1950, at which time there was legislation in progress to establish a medical school. The president of the university proposed that every possible effort be made to include the medical school as an integral part of the university. The Florida Center of Clinical Services was established in 1950 and this administrative structure included a Speech and Hearing Clinic, Reading Laboratory and Clinic, Marriage and Family Clinic, Psychological Clinic and an Adapted and Corrective Exercises Clinic. This center had goals of helping people to work together, to understand one another, and to realize the knowledges and skills that each had to contribute to the individual with a problem or disability.

In conjunction with the medical center study, it was my assignment to visit medical schools and centers throughout the country. I found allied health personnel were being educated in many different settings. It was as a result of this study that we decided that an administrative structure which would bring many of these allied health programs together was essential to provide common core courses and to develop respect for one another in the respective disciplines. The College of Health Related Professions was established as one of the five colleges which today form the J. Hillis Miller Health Center complex. The other colleges are Dentistry, Medicine, Nursing and Pharmacy. In addition, there are ten other colleges in the university.

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\* Dean, College of Health Related Professions, University of Florida, Gainesville.

Presented at the 111th annual meeting of the Kansas Medical Society, May 5, 1970, Wichita.



The College of Health Related Professions, in a medical setting, was a new concept within a university. Initially the college was tolerated but not well supported. However, in 1965, John Gardner, then Secretary of Health, Education and Welfare, during testimony before a congressional committee, indicated that one of the essentials necessary to meet the health manpower mandate was more colleges such as the College of Health Related Professions at the University of Florida. Suddenly, this college became a model for the nation. At the present time in the College of Health Related Professions, we have bachelor of science degrees in physical therapy, occupational therapy, and medical technology, and master's degrees in rehabilitation counseling and health and hospital administration. The Department of Psychology in the College of Arts and Sciences has subcontracted to us the preparation of clinical psychologists. We have a Department of Communicative Disorders (speech pathology and audiology) and a Rehabilitation Research Institute. We are considering, or have considered, degree programs for medical record librarians, medical illustrators, dental hygienists, radiological technologists, nutritionists, social workers, ophthalmic technologists, physician's assistants, psychological technologists, and several other health specialties.

My position as dean of the college is quite difficult to define. The best description of my job was written by a most prolific author—Anonymous. It is aptly entitled "The Dean's Lament":

I'm not allowed to run the train  
or see how fast t'will go,  
I'm not allowed to let off steam  
and make the whistle blow,  
I cannot exercise control  
or even ring the bell,  
But let the damn thing jump the track  
and see who catches hell!

This is probably a fairly accurate job description for each of you. You have many and varied duties which require long hours to perform. You have long realized that all of the work cannot be done by you alone. Tasks must be delegated to other individuals, nurses, medical technicians, and other health personnel. However, you are indeed responsible for the delivery of comprehensive health care.

It has been interesting and gratifying to follow the development of the colleges of health related professions throughout the country, who are seeking to get you more assistance in performing your tasks. Three years ago there were only 13 of these colleges; today there are 70. In the spring of 1967, the 13 original schools met and decided to analyze common problems that were being encountered. After much discussion and sharing of experiences, we agreed on

the formation of the Association of Schools of Allied Health Professions, the purpose of which is to speak as a united voice in behalf of the many varied health occupations and professions. The Kellogg Foundation heartily responded to the Association's need for a central office in Washington, D. C. The Association was then in a position to speak as a united disciplinary voice for those in allied health in behalf of patients and patient needs. Today there are 135 health organizations which have become associate members of our Association. Nearly a thousand individual members who are interested in health have added their voices to our cause. The objectives and goals of the Association of Schools of Allied Health Professions are not concerned with the business of any profession, but rather with the needs of patients, the consumers of health care. We are joining forces with medicine, dentistry, and others in behalf of these common goals.

These developments are reported as a backdrop for some additional observations and considerations about the fallacy of peaceful change. Since change is the most constant factor we have in society, it has become essential to realize the necessity of accommodating to change. Benjamin Disraeli, the first Earl of Beaconsfield, said, "The health of the people is really the foundation upon which all their happiness and all their powers as a state depend." This statement is as accurate in 1970 as in 1877. Sixteen years ago Arnold Toynbee said something to the effect that the 20th Century will be remembered chiefly as an age in which human society dared to think of the welfare of the whole human race. That day has arrived. Society demands that good health and well-being for all and comprehensive rehabilitation services for those with illnesses and disabilities shall be among the rights and privileges of all of our citizens regardless of race, color or creed. The pressure to prepare the needed manpower for this extension of health care to a system of quality health delivery to all of our citizens, provides a challenge which demands thoughtful and considered judgments by every health professional and by all people interested in health care. Regardless of our interest or specialization in the health field, we must now accept the mandate for change and attempt to relate to the changing health care systems and to the utilization of health manpower. We must unite with one articulate voice in an effort to analyze and establish the conditions whereby we are able to meet such demands. Our goal should be, as expressed by Captain Cooke, "To go not only as far as men have been, but as far as men can go."

The test of a man's education is that he finds pleasure in the experiences of the mind. The commitment to perform certain responsibilities and the

delegation of these responsibilities must be re-evaluated and restructured so that we might meet society's commitment and yet maintain pleasure in the most effective utilization of mindpower which is our most treasured possession.

There are numerous problems with respect to initiating some of the changes that are inevitable. Certainly flexibility is one of the most important adaptive criteria for realistic planning for the future. Richard K. Paynter, Jr., former chairman of the board of New York Life Insurance Company has said, "The flexible mind is able to discard comfortable habits and calcified attitudes that no longer measure up to the times." Needs as well as goals change with great rapidity, and we must remain adequately flexible in our planning to adapt to these changes. We not only have to maintain the programs of today, but also must have a feeling for what is to be. With respect to our planning and action for health care for the future, it seems better to err in respect to what appears to be likely to happen rather than to build programs on what is happening or what has happened, for these programs are already outdated. It is necessary to change as new knowledges and concepts demand further change. Decisions made today by the administrators and boards of clinics, hospitals and other health care systems may require two to five years for implementation. Planning does not necessarily incorporate action. Yet planning without action is futile.

Health is now our second largest industry. In 1900 there was one supportive person to each physician; today, the ratio is 13 to 1, and by 1975 it will be 20 or 25 to 1. In the past, hospitals did a salutary job at training many of the supportive personnel for physicians, but this tendency will be phased out and vocational-technical schools, junior colleges, colleges and universities will assume this responsibility. The very expensive education and training costs can no longer be written off to patient care, and hospitals will not be funded for education and training purposes. Whether or not academia can do as well as the hospitals in preparing these supportive people for health careers depends chiefly upon how readily the facilities of hospitals, nursing homes, medical clinics and other health facilities can be made available for clinical affiliation. Contractual agreements must be established between the academic units and the health facilities in order to provide the necessary clinical training.

Most of us are also aware that we are experiencing a knowledge explosion. Scientific knowledge doubled from 1900 to 1950. It more than doubled again from 1950 to 1960, and today scientific knowledge seems to double every 12 to 16 months. In terms of living, this means that a twelve-year-old boy will

have to change his vocation at least three times in his life span. This implies that every physician will have to change his way of practice at least three times.

The system of delivery of health care must also change. Technological developments that took us to the moon are leading us to many changes in the delivery of health care. There are a multitude of established and new services which we must provide patients. There now exists a demand for an array of allied health personnel for situations quite different from those we imagined only a few years ago.

*Figure 1* illustrates a top-heavy schematic which in no way resembles a pyramid. It does, however, demonstrate the urgent need for middle health manpower.

The economist contends that good utilization of personnel will provide an approximate pyramid. In most undertakings comparable in size to the health industry, we find at the top-most peak of the pyramid a group of major executives, followed by levels encompassing large numbers of individuals who are skilled and semi-skilled, down to unskilled. With technological developments and automation, the unskilled make up a smaller and smaller number of the work force. These groups at different levels are given varied degrees of responsibility. Considerable mobility makes it possible to move from one level to another either with advanced education or with on-the-job training experience.

The health ladder has not been effective in providing opportunities for advancement. The enterprise of health care has been dominated by a relatively small group of professionals at the top of the schematic—physicians, dentists, clinical psychologists, and others with nine-plus years beyond high school. We then find a thin line down to bachelor's degree people. Those with three years of higher education largely represent the three-year hospital-based program for training registered nurses. The lower base of the pyramid takes us to the aides and attendants with no formalized preparation. We see the need for middle manpower in the largely uninhabited intermediate areas where mobility is currently low and often not possible. An orderly seldom becomes a nurse; a nurse almost never a doctor. Because of little mobility and generally poor pay for those in the lower levels, these positions have often been filled with individuals with limited intellectual capacity and educational achievements. They have too often been locked in with no opportunity for advancement.

Two considerations must receive attention with regard to this illustration. What kind of services can be provided if we are able to fill the intermediary area? How and where shall we secure the candidates and the educational and clinical experiences for those to be in these health careers?



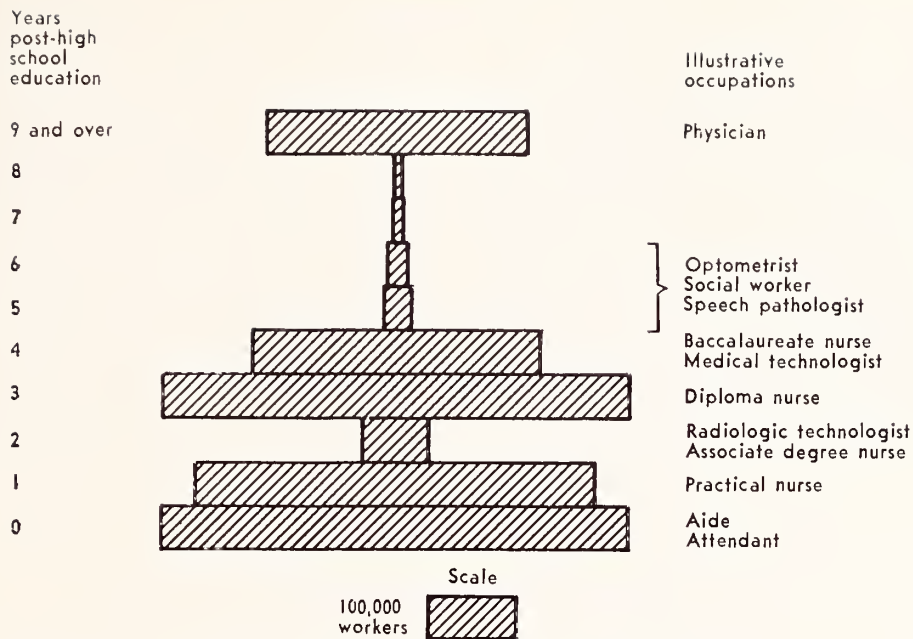


Figure 1. The Medical Services Pyramid<sup>1</sup>

<sup>1</sup> Education for the Allied Health Professions and Services, Report of the Allied Health Professions Education Subcommittee of the National Advisory Health Council, U. S. Department of Health, Education and Welfare, P.H.S. Publication 1600, U. S. Government Printing Office, Washington, D. C. 20402.

Let me give an example of what is meant by mind-power utilization. After receiving my Ph.D., I had a "union card" whereby I could work with an individual with a speech defect. A one-to-one relationship could be established with a child who lisps. I could sit with him for half an hour a day, five days a week, whistle, go "sssss," and the child could try to reproduce the sound and insert it into his speech pattern. No one had taught me that I could take a group of volunteers or those with two year associate degrees from junior colleges, place 30 of them in a room and walk from one to the other, multiplying my skills by 30. With proper supervision, quality could be maintained while quantity of services was increased. However, the resistentialism of professional groups to the delegation of responsibilities by surrendering anything which they have been taught or assumed was theirs, has made the application of this concept most difficult.

To be sure, delegation of tasks and responsibilities requires careful considerations in order to complement a health delivery system. Knowledges and skills, education and training, are the two components we generally believe to be essential to prepare a person to work in the applied areas of health. A third component, capacity for independent action, should also receive attention. Table 1 describes four levels of preparation and a possible plan for the training of health personnel at these various levels.

Considering four levels, and perhaps others should be added, at Level I, we have the doctorate or possibly a master's in some specialties; at Level II the bachelor's and master's degrees; at Level III the two-year college associate degrees; and at Level IV the post-high school and vocational-technical training. At the doctorate level we need 4+ across the chart, at the bachelor's, 4+ in knowledge and skills, with

Level of Education	Knowledge	Skill	Capacity for Independent Action
I. Doctorate . . . . .	4+	4+	4+
II. Bachelor's and master's degrees . . .	4+	4+	2+
III. Two-year college associate degree . . .	2+	4+	1+
IV. On-the-job vocational or technical training . .	1+	4+	0



2+ in capacity for independent action. This person generally works under the supervision and direction of someone else. At a third level, 2+ in knowledge, 4+ in skill, 1+ in capacity for independent action. At the fourth level, 1+, 4+, and 0+. Let us remember that at the level of three and four, individuals can be prepared for middle health manpower much more quickly and in much greater numbers. Mindpower utilization implies that the individual with advanced education and training will direct the activities of the individual with less training. He will become a manager of doers rather than primarily a doer. This concept does not imply that we do not need more physicians, nurses, physical therapists and other health manpower. It simply implies good management, delegation of responsibilities and duties, and a means of meeting society's demands for one quality of health care and well-being for all of our citizens.

This concept further implies that if more duties and responsibilities are to be delegated to middle health manpower by the established and newly developing health occupations and professions, it will be necessary to give more attention to respect and understanding for one another. It further implies that there is a need for core curricula for all in health, including physicians. William H. Stewart, M.D., former Surgeon General, at the 1965 White House Conference on Health, stated: "It is time for us to focus sharply on the nature of the training we provide." He urged us at that meeting to "give high priority to education for what." In 1970, we still have not accomplished this objective.

Physicians have been delegating responsibility to nurses in their offices for many years. The more confidence the physician has in a nurse, the more responsibility he delegates. Through job analysis we need to determine what can be delegated, and then prepare individuals for the health occupations and professions with the necessary knowledges, skills and capacity for independent action.

Physicians are indicating a need and willingness to delegate further responsibilities which they have previously accepted and assumed. The experiments with physician assistants in many parts of the country are indicative of this desire. However, medicine must determine what the physician assistants are to do. When this has been specified it can then be further determined what the preparation must be for entry into the health labor market. We must get them ready to fit today's social pattern as well as tomorrow's. This implies that they will probably need a degree of some kind, with credits that will permit them to move up the ladder to higher attainments if they have the motivation, ability and inclination. Many of these credits should not only permit them to climb

the ladder vertically, but laterally to another ladder in some other health career, if so desired. The physician assistant, or whatever he is to be called, should have respectability and mobility with a "union card" which provides all physicians in all states with an assurance of his abilities and capabilities. If physician assistants are to have these qualities it would seem that physician assistants for all specialties of medicine should have certain basic core experiences and then receive specific clinical expertise in the area in the medical specialty of their interest. They should receive the major portion of their clinical experiences with the physician in private or group practice. The medical school is not the place for the physician assistant to get the major portion of his clinical training because academic professors already have a number of assistants—third and fourth year medical students, interns and residents.

We hear a great deal about how medical corpsmen should be and could be a much more vital part of our civilian labor force in health. To accomplish this goal is not going to be as simple or as easy as some of the bills in Congress and some of those writing and speaking on the subject imply that it will be. When corpsmen went into the medical services in the armed forces, a career in health was not their vocational goal. Most of them do have vocational goals, and when they leave the service the majority of them will wish to return to their original vocational goals. The corpsmen in the armed services can work up to a status of respectability and to a salary level that is commensurate with maintaining a family. When they come out of service into civilian society, these same opportunities are not present in the areas in which they have been working.

Many of the categories which are accepted in the armed services are not well accepted status positions in civilian society. Our major hope of getting more corpsmen into the health care system of civilian society is to close the gap between training programs with no credit conducted by the armed services and the approved programs for those in civilian societies for similar assignments. They will be ready to fit into the health labor market when they are discharged from service and will be much more likely to become contributing members of the health system. It is also necessary to work out equivalency examinations to determine the knowledges and skills of corpsmen and to give necessary credit toward required degrees essential to certification or licensing. The corpsmen would then be able to move up the ladder much more rapidly. Indeed, we should encourage in every way possible receiving corpsmen into the labor market of the health occupations and professions of civilian society when they leave the armed services.

Pogo, the great philosopher, has said, "We have met the enemy, and he is us." He is us in never having previously committed ourselves as a nation to quality health care for all. He is us with respect to manpower utilization and with respect to modernizing our delivery of health care. If the test of a man's education is that he finds pleasure in applying his mind to his work, we should restructure the delivery of health care so that society's mandate is met and yet have effective and satisfying utilization of health "mind-power." It becomes necessary to orient the health professionals to the understanding of these differences in order that communication be made possible. Catalysts and consumers can and must help health

professionals in the solutions to their problems and their needs.

An understanding of the sociological factors of today and tomorrow will help the physicians of Kansas solve the problems which will improve the delivery of health care in your respective communities. Tolerance for turbulence in the transition will yield the desired results more rapidly. Perhaps the words of Professor Niebuhr are most applicable to the fallacy of peaceful change and to the development of an attitude of tolerance for turbulence: "God grant me the serenity to accept what I cannot change, the courage to change what I can, and wisdom to know the difference."

## The Weaker Sex

(We are indebted to Garland Campbell, M.D., Arkansas City, for forwarding this case report that was picked up by one of his alert patients.)

Taken from *History of Bedford, New Hampshire*, page 638:

July 24, 1824—Doctor Woodbury was called to visit Miss Edie McIntire, who had been taking away rye in the sheaf, on the beam of a barn. By some misstep, she fell the distance of seven or eight feet, and struck directly on the sharp point of a stake, erect in her. So completely was the girl transfixed with the stake that it was carried, with the girl upon it, some distance from the barn before it was taken from her. The stake first struck on the fleshy part of the ischium, and passing laterally into the lower bowels about two inches, thence through the rectum to the left, up the body in an oblique direction, and out of the left breast, about three inches from the nipple. It fractured three ribs in its passage, the stake passing through the body 27 inches. It was five inches in circumference at largest end. It came out of the breast six or seven inches, so that she could take hold of it with both hands while the stake was in her. It was made of a young hemlock and the bark with the knots was just stripped off. The stake is now deposited in the medical institution at Dartmouth College. Edie was a grown girl, large size, aged fifteen.

"On my arrival," says Dr. Woodbury, "I found her on a bed with her common clothes on,—her friends thought her dying. I was requested not to do much for her for fear she would die with more pain: her pulse was scarcely perceptible; her breathing was short and hurried, with a cold sweat on her skin; she had an extremely ghastly countenance; did not include to say much; submitted to what was done for her without any apparent concern or sensation. She said she had no pain—made no complaint—but was very faint. There was but a trifling hemorrhage from the wounds. After the application of simple dressings to the wounds I endeavored to excite the system. She soon began to breathe better—her pulse began to be more perceptible, and her skin grew more moist and warm; I now left her for the night. Without more particulars, suffice it to say, she recovered. In her first attempts to walk, her body inclined a little to the left, but she soon became erect. Six weeks from the time of the accident she was able to attend school, sixty rods from her home. During confinement I bled her five times. She subsisted seventeen days wholly on water, in which Indian meal had been boiled. The next year I saw the girl, robust and hearty, living at the house of Mr. Thompson Shepard, where she was when the accident happened."



# Continuing Medical Education

## *Whose Responsibility?*

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MEDICAL SOCIETIES and hospitals have long been active in continuing medical education and a few medical schools, including our own University of Kansas, have recognized its importance for half a century. Major and concentrated activity in continuing medical education commenced at Kansas and a half dozen other schools immediately following World War II, and at more or less the same time numerous professional specialty organizations materially increased their activity in the field. Now continuing medical education is an "in" thing commanding substantial amounts of money from the federal government, and persons and organizations that have not previously been active in the field have suddenly jumped on the bandwagon.

Few medical schools have been as active in continuing medical education as the University of Kansas School of Medicine, but even there its postgraduate department has had to be largely self-supporting. Members of that department have, for 25 years, been active nationally in support of the idea that professional schools should assume a leading role in producing what may be termed "formal postgraduate courses," and they have supported the idea that professional societies should continue at least their present level of activity in the production of "scientific sessions." The increasing activities in the field, however, highlighted the fact that "courses" and "scientific sessions" are, however laudable, only episodes in the life of the physician and can only supplement the *continuous* continuing education that is needed in the physician's daily life.

Community hospitals have, from their inception, been logical and active centers for continuing education, but as their staffs have tended to be specialized and as their physicians' work loads have increased the clinical staff meetings have perhaps lost some of their relevance and their drawing power. In many instances they have become exercises that are carried on to satisfy the requirements of the Joint Commission on Accreditation. At the present time community hospitals are exploring, with varying degrees of success, methods for making continuing education more

relevant to the work done in the hospital and more nearly *continuous*.

This is perhaps the time to define the term "continuing medical education." The terminology has been confused and confusing. Some 25 years ago the American Medical Association adopted "graduate education" to designate internship and residency, and "postgraduate education" to include the education activities engaged in by a physician after he had completed the formal qualifications for his life work and during his active professional life. In other circles, however, "graduate" applies to work toward advanced degrees (and I like to think that the M.D. is an advanced degree). Between World War I and World War II "postgraduate" was applied to training for specialty practice, and many have continued to use it in this sense. The term "continuing medical education" has recently enjoyed increasing support and currency, and for our purposes I shall define it as all of the learning activities in which a physician engages after he has completed the formal education to qualify him for his particular field of medical practice. It is my thesis that we should not think of continuing education as consisting exclusively of "courses," "seminars," "workshops," "symposia," and the like.

One of the major problems in the '70's is to take a fresh look at continuing medical education—what it really should consist of—and then put our efforts into defining the educational needs of physicians and devising the most effective ways of satisfying them, drawing from the whole spectrum of educational methods and modalities.

While it is convenient to draw sharp distinctions between different levels of education this practice is not always particularly fruitful or even realistic, and it is difficult to set the dividing line between continuing education and adult education. For that reason I should like to take this opportunity to try to put continuing education for physicians in perspective in the broad field of adult and continuing education for health. An exercise of this sort is useful because it is neither logical nor maximally effective to have continuing education programs exclusively for physicians. Best results can only be got when there is adequate continuing education for all members of the health care team. In order to discuss levels of

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TABLE 1  
FORMAL PRE-TRAINING AND CREDIT COURSES

<i>Levels of Adult/Continuing Education Activities</i>	<i>Types of A/C.E. Activity</i>
A. Graduate School	<p>Leads to doctors' degrees:</p> <p>M.D./D.O. D.D.S. Ed.D. Ph.D. Dr. P.H. D.V.M. Other doctor's degrees</p> <p>Leads to master's degrees:</p> <p>M.A. M.S. M.P.H. M.Bus.Adm. M.Hosp.Adm. Other master's degrees</p>
B. Undergraduate School	<p>Leads to:</p> <p>A.B. (various majors) B.S. (various majors)</p>
C. Community (Junior) College (Associate and Diploma Programs)	<p>Dietetic technician Inhalation therapist Medical laboratory technician Medical record technician Medical secretary Mental health worker Nurse Nursing assistant Nursing home assistant Practical nurse Physical therapy assistant Ward clerk</p>
D. Vocational-Technical School (Diploma Programs)	<p>Clinical laboratory assistant Dental assistant Dental hygienist Medical secretary Medical record secretary Nursing assistant Operating room technician Practical nurse Ward clerk</p>
E. Hospital Training Program (Diploma Programs)	<p>Cytotechnologist Inhalation therapist Laboratory assistant Nurse Nurse aid Practical nurse Physical therapist's assistant Radiologic technologist</p>

TABLE 2  
INFORMAL PRE-TRAINING

<i>Levels of Adult/Continuing Education Activities</i>	<i>Types of A/C.E. Activity</i>
A. Hospital/Nursing Home	Cardiac catheterization technician EEG technician EKG technician Inhalation therapy technician Laboratory assistant Medical records secretary Nurse aid Nursing assistant Operating room technician Renal dialysis technician Ward clerk
B. Clinic/Doctor's Office	Dental technician Laboratory assistant Medical assistants Nurse aids

adult and continuing education for health with even moderate precision, I have attempted to develop a "taxonomy" of adult and continuing education for health (*Tables 1, 2, and 3*). In this I have divided the field into three major divisions:

1. Formal Pre-Training
2. Informal Pre-Training
3. Non-Credit Continuing Education

The formal pre-training and credit courses include work done in graduate schools (including medical schools), undergraduate schools, community (junior) colleges, vocational-technical schools, and hospital training programs (*Table 1*). The advanced degrees, in addition to the specific ones listed include those offered in: dietetics, hearing and speech, hospital administration, medical social work, medical technology, nursing, occupational therapy, pharmacy, physical therapy, special education, etc. The bachelor's degree is offered in: dental hygiene, dietetics, hearing and speech, medical record librarianship, medical social work, medical technology, nursing, occupational therapy, pharmacy, physical therapy, etc.

While admitting that the pre-training programs are crucial, I wish to focus our attention at this time on the no-less important area of non-credit continuing education. Because it seems useful at this point I have, in the "taxonomy," divided this field on a geographical basis: local, subregional, regional, and national (*Table 3*).

The local activities are of prime importance. They have, however, received the least recognition and the least organized attention. These activities take place in the home, the hospital, the local department of health, the local school district, etc. As indicated in

the "taxonomy" they consist of individual and personal learning activities and those of relatively small groups who have related professional experiences and responsibilities. Whereas continuing education activities at the level of larger geographic divisions are usually the responsibility of full-time persons, these all-important experiences at the local level are rarely the responsibility of anyone who can devote a major amount of time to defining educational needs, developing appropriate educational programs, and stimulating interest in them.

This is a deficiency that requires our attention as a first priority.

The appropriate activities for this level, in order to be maximally relevant and effective, need to focus on local problems and involve local personnel. They can (and should) be largely continuous. There is really no place here for the big shows ("courses," "symposia," "workshops," and the like). All too often local organizations, when they feel the urge to increase their activities in continuing education, copy the regional leaders and put on some big shows, thus applying their talents and their finances to an activity that is more appropriately, more effectively, and more efficiently the province of larger organizations while failing to do the important job for which they are ideally suited, the one that the large regional organization cannot do: continuous, community-based, locally relevant, continuing medical education.

Subregional activities, as they apply in Kansas, are those that are less than state-wide. These are almost necessarily episodic in contrast to the local activities. They can, however, be fairly precisely tailored to the needs of a portion of the state such as

TABLE 3  
NON-CREDIT CONTINUING EDUCATION

<i>Levels of Adult/Continuing Education Activities</i>	<i>Types of A/C.E. Activity</i>
A. Local (related to locus of work as home, hospital, department of health, school district, etc.)	Reading books, journals, etc. Consultations (personal or telephone) Self-instruction (programmed formats & personal audio-visual) Small group instruction (programmed & A/V) Staff conferences Patient case analyses Institutional activity analyses Institutional efficiency studies Consultant teaching for small groups Professional society meetings with local talent or experts from nearby In-service/staff development programs Red Cross, YMCA, etc., first-aid courses Training programs for ambulance & rescue personnel Lay education for health
B. Subregional (less than statewide) <i>These are episodic</i>	County and district professional society meetings (guest consultants or speakers, mostly local talent focused on solutions to local problems) Community college upgrading sessions "Workshops" and courses related to local problems organized cooperatively by small units in the region (small hospital department, boards, etc.) Circuit riding consultants Traineeships at larger institutions Red Cross, YMCA, etc., first-aid courses Training programs for ambulance and rescue personnel
C. Regional (statewide or more) <i>These are episodic</i>	Scientific sessions of state or regional professional organizations Symposia at large professional schools (with abundant out-of-state talent) Instruction of those who will return to local level to teach workers Circuit courses Traineeships (continuing education in residence, i.e., spending several days to weeks in a concentrated, participative learning experience)
D. National <i>These are episodic</i>	Scientific sessions of national organizations using national and international talent National "colloquia," "symposia," or "seminars"

several related counties, two or three communities in geographic proximity, or even a metropolitan area. For maximum subregional relevance, they should maintain the local tone to a major extent, and their appropriate activities are suggested in the "taxonomy."

The regional and national levels of continuing education activity are probably sufficiently explained in the "taxonomy."

If we accept the idea that the episodic activities in continuing education at the national, regional, and subregional levels are less important than the local

ones it is disturbing (but not surprising) that the latter receive less organized attention. The Continuing Education Unit of the Kansas Regional Medical Program is in the process of surveying continuing and adult education for health in the Kansas region, and has had little difficulty in cataloguing state-wide or regional educational programs. There has been great difficulty in getting information about subregional and local activities because of problems in identifying responsible persons or organizations, and because of a general tendency to overlook them as phases of continuing medical education.



In order to do appropriate planning at every level, there is a need to cooperate in stimulating the development of local authority for programs at the local level, for creating methods of exchanging information about these activities, and for sharing key personnel. This responsibility rests upon all of the health professions for stimulating, increasing, enhancing, and supporting community-based *continuous* continuing education for *all* members of the health care team.

Continuing education is therefore everybody's responsibility: the professional schools', the professional organizations', the hospitals', and—last but not least—the individual's. Perhaps the smallest role belongs to government—particularly the federal government, where Parkinson's Law seems to work best (or worse).

### NATIONAL AMBULATORY MEDICAL CARE SURVEY

The National Center for Health Statistics in the Department of Health, Education, and Welfare, as part of its continuing program to provide data on the health status of the American people, is currently planning the National Ambulatory Medical Care Survey (NAMCS). The purpose of the NAMCS is to collect objective, quantitative information which can be used to describe the types of ambulatory patients seen by physicians, the nature of the patients' problems and the resources for their care. This information is needed by leaders in medicine and related professions for planning and organizing health services, for planning efficient utilization of health facilities and manpower, and for determining modifications in medical education.

The survey will involve a national sample of physicians who will be requested to provide data concerning a small number of the ambulatory patients they see. When the NAMCS is in full operation (sometime in 1972), about 3,000 physicians each year will be providing data on an estimated 240,000 ambulatory patient visits. Physicians selected to participate in the survey will provide information concerning a sample of the patients that they see during a two-day period in each of four consecutive calendar quarters. All physicians will be replaced by new sample physicians after participating for four quarters. The types of data the survey will collect include age, sex, and medical problems of patients plus treatment prescribed and laboratory tests performed for patients. Of course, all data will be held completely confidential and used only for statistical purposes.

Ambulatory medical care is by far the largest seg-

ment of the American health services system in terms of prevalence and volume. Yet, little has been done on a national scale to gather reliable information for use in planning and research. The dearth of information on this subject has led leaders in the medical profession to persuade the National Center for Health Statistics to undertake the National Ambulatory Medical Care Survey. This information will complement the health data already being obtained by the Center through its ongoing national surveys: the Health Interview Survey, Health Examination Survey, and Hospital Discharge Survey. The success, of the NAMCS, of course, will depend on the cooperation of practicing physicians who are the major source of ambulatory medical care data.

The American Medical Association and numerous other major medical associations have expressed their support for the NAMCS and have provided advice and consultation in its development. With the cooperation of practicing physicians the survey will provide very valuable data for documenting the health status of the American people and for informing public and private policy decisions.

### CANCER CHEMOTHERAPY PROGRAM

Mead Johnson Laboratories will sponsor a Cancer Chemotherapy Program in 1971. The program will consist of lectures to be given by outstanding medical authorities in the field of Cancer Chemotherapy. Fourteen physicians, all with hospital, university or clinic affiliations will deliver the lectures.

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# Total Health Care

## *The Team in Medical and Allied Health Education*

RALPH W. EICHENBERGER, M.D.,\* *Lexington, Kentucky*

IT HAS BEEN SAID that the health team idea finds itself in a class with Mark Twain's weather, much talked-about, little done-about.

How much talked about?

We have been interested in the team concept at Kentucky since the foundation of the medical center. I have been interested in the team approach to medical care for several years as a result of my own practice experience and the discovery that I could never do it all myself. I have tried to keep abreast of the subject, but in preparing to tackle this topic I thought perhaps I ought to make sure I had not missed anything in the literature.

We have a new Medlars service available in the Ohio Valley area which was reputed to be much quicker than the former service when one had to go to the National Library itself. I decided to try it out and requested a print-out on articles dealing with the health team.

I don't know why I should have been surprised at the result. I get this kind of response whenever I try to communicate with computers. I have the feeling of the little boy with his arithmetic problem who, when referred to his biostatistician father for help, complained "I didn't want to know that much."

Our Medlars system only goes back to 1967 and I generously estimated in my request there might be 50 articles on the team since that time. This was the result—1,867 references from three years! I certainly didn't want to know that much.

It turned out to be an interesting experience, trying to find out who was saying so much about the team. One certainly is enlightened to the complexity of the problem. What do we mean "team"?, what are our models?, who are the team members?, where do they function?, etc.

The question, "What do you mean by health team?" depends on who you ask. The dentist (and they are prolific writers—239 references in these three years) mean one thing by the team. Their team includes the appointment-makers, the hygienists, the chair assistants and laboratory assistants. And

some magnanimously include other paradecimal personnel like physicians, nurses, etc.

The nurses (and they have not been exactly silent on team talk—451 articles) espouse another team concept. They like to think of the team as being the doctor and the nurse. But, the nurses talk as well about the nursing team and have developed quite a

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**The delivery of total health care to patients, families, or communities by an interdisciplinary team of professionals is a much-talked-about, little-done-about phenomenon in our society. The team concept needs to be introduced to health professionals during their training, and opportunity given them for interdisciplinary team experience.**

**Three years' experiences with all-student teams of medical and allied health professionals at the University of Kentucky are discussed.**

**The suggestion is made that institutionalization of the team approach to health care delivery will only become a reality when it is seriously introduced at a graduate level of education for all the team members.**

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concept of "team nursing," whatever that means to anyone else.

Pharmacists are getting in on the act (45 articles) and are agitating for a more meaningful role on the health team—and rightly so. And, of course, the whole gamut of allied health professionals, the physical therapists, clinical nutritionists, medical technologists, occupational therapists, medical assistants, x-ray technicians, inhalation therapists, are included in the health team. Optometrists, podiatrists, and even veterinarians conceive of a health team on which they feel they can be included.

Physicians talk about the team (892 references). The physician thinks of it as *my* team if he includes his paramedical members, or *our* team if he is talking about his specialist colleagues on the cancer team, or the transplant team, or dialysis team, etc.

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Presented at the 111th annual meeting of the Kansas Medical Society, May 5, 1970.



Perhaps a real hang-up is the mental picture we construct when we think "team." Are we thinking baseball team, basketball team, or football team? What model do the nurses think of when they say team? One wonders if it is a team of horses—or perhaps mules! The emergency room team may well have as its model a combat unit.

Perhaps our use of the team idea at all is our major hang-up, perpetuating a hierarchical structure that does not belong to health care delivery. For we begin lining up our players, no longer according to the purpose of the game—help to the patient—but according to some pre-determined, rigidly structured role sets fixed by tradition or registration, accreditation or licensure.

Perhaps no one is more hung up on the team than we physicians. Perhaps no model is less appropriate to health than the football team so often implied. Perhaps we ought to rethink the "quarterback" role as being the least appropriate concept for the health care leader.

In fact, it might be most appropriate to remove health care delivery entirely from the athletic arena and stop talking about the *health professional* team and think more in terms of the patient as the one who should really be directing the performance.

The team setting is another important facet of this whole question. Does the team function in the operating room, the intensive care unit and the recovery room? Is it a team because it is working in the rehabilitation center or the extended care facility, or in the neighborhood health center or mental health agency?

These are sites where the team idea has been used for a long time and it is old hat to talk or write much about these anymore (but still some 361 references). In fact, our colleagues in some of these fields think the whole idea is old hat and come to a discussion of the team with the question, "So what else is new?"

Three pressing realities of today's health picture are what's new, and demand a new approach, whatever we call it: the potential for better health through an increasingly complex technology, the increasing demand of people to be healthy rather than unhealthy, and their increasing ability to appreciate the difference.

The force of these realities at this time have produced the health delivery crisis which calls for action. It is because of this crisis the health team idea is boiling and the health team approach is being talked about as one answer, for no one discipline or profession can solve it alone.

I would emphasize *one* answer. Herein, I believe, lies the problem of this much talked-about, little

done-about solution to our health delivery crisis. If the team concept is valid at all the interdisciplinary approach deserves institutionalization in the mainstream of our health system, not endless advocacy, or experiment, or implementation only in the side streets of our health delivery system, ghetto medicine, multiphasic screening programs, etc.

By institutionalization I mean, of course, in the sociological sense of the word, not the housing of it in institutions or any particular facility in which the team may function. Institutionalization of the team approach, without getting too pedantic about it, means that we will clarify our goals for health care delivery. It means there will be re-orientation of health professionals for new roles in health delivery. Most importantly, it means the deliberate setting up of an interprofessional means of delivery in the mainstream of our health delivery system, the primary care setting.

Perhaps one ought to deal first with the problem, "Is there any question that the team approach is necessary? or feasible? or desirable?" Of course, the answer is yes, there are questions on all counts.

But, anyone today who is seriously concerned with finding solutions to our health delivery crisis will sooner or later come to the conclusion that so many others have, that the implementation of the team method at the point of delivery of primary health care is a must. This is the mainstream of our health system and this is where the crisis is.

The argument for or defense of the team approach is what at least a half of all these references are about. However, a perfectly adequate case for it can be made by reference to the reports of a few critical analyses of our health system over the past five years by committees of experts rather than by individuals, such reports as those of the National Commission on Community Health Services,<sup>1</sup> the Coggeshall committee,<sup>2</sup> the Millis commission<sup>3</sup> and the Ad Hoc committee of the A.M.A. on Family Practice.<sup>4</sup>

A second question that follows is, where in the education process should the team concept begin. The latter three references, though primarily concerned with medical (physician) education not only emphasize the essentiality of the team approach to today's health needs, but to the place the team concept must hold in the education of all health professionals. Many medical and allied health educational institutions are abreast or ahead of the recommendations of these committees in attempting to promote the team concept in their students.

We have had an experiment going on for the past three years at the University of Kentucky Medical Center in team learning by medical and allied health students.<sup>5</sup> It is but one of many such experiments

going on. It does have some different, if not unique, features about it. And it has given us some experience from which I would press the point for the institutionalization of the team approach in both undergraduate and graduate medical education.

I will discuss only briefly our three years' experience with medical and allied health students.

Students of the allied health and health-related disciplines are oriented in a semester course to a comprehensive concept of community health. For most of them, this is the students' first and only common exposure to each other in their professional education. There is opportunity for interaction among the various health or health related disciplines (seven different disciplines in the present class) even in the classroom environment through seminars and team projects.

But the real learning experience of community health, and certainly of the team approach, is most meaningfully accomplished in the community clerkship. At Kentucky, this is coordinated with the last three weeks of senior medical students' six-week clerkship in community medicine. The teams are composed of as varied a mix of students as there are disciplines represented in the class. The team in one community had students from clinical nutrition, medicine, nursing, pharmacy, and physical therapy. Other teams functioning at the same time had other representatives from behavioral science, social work, dental hygiene and clinical pastoral counselling.

A local physician is the team's sponsor in the community. He is their entree into the community and the one to whom the students are professionally responsible. In initial briefing sessions, the students are oriented both to the individual and team objectives of the clerkship and, specifically, what is expected of them from their community experience. From then on the team is on its own to plan its course of action, to decide on delegation of responsibilities, and to outline and carry out its activities in the community.

All sources in the community are approached for their contribution of data that will assist in making a community diagnosis: the local government officials, the local chamber of commerce or a community planning council, government agencies, voluntary agencies, the school system.

Daily the team gets together to go over its findings and nightly discuss their relevance to the health status of the community.

The different agencies of the local health system are investigated by different members of the team—the P.T.'s inspect the facilities and evaluate the met and unmet needs in their field of special interest. Others acquaint themselves with the services and

problems of private practitioners of health service. Together they may inspect the community's public health facilities and services. Home calls are made with a visiting nurse, and community citizens interviewed.

Once-a-week visits are made by faculty supervisors from the university for the purpose of reviewing progress and to respond as consultants to any questions arising from the study.

The final community diagnosis is derived from the combined contributions of all team members, and one team-compiled report is presented to their student peers, to faculty from the involved disciplines, and to interested persons, health professionals and others, from the community.

We have no difficulty obtaining an evaluation of the experience from the students at the conclusion of it. They have definite positive and negative reactions to their team experience.

The intellectual stimulation that comes from discussing, planning, and implementing their joint analysis of the community has a salutary effect on developing professional egos. The appreciation of the competencies and potential contributions of the various allied health professionals to comprehensive health care gained from this exposure to each other is acclaimed by students even in this analytical community health exercise. On the other hand the lack of mutual understanding and appreciation they witness among their counterparts in practice in the community is somewhat disconcerting.

The appreciation of many common problems of effective delivery of health care in a community reinforces for the moment the advantages of a team approach as a solution. On the other hand, the lack of effective team models in the real world of health delivery leaves a definite feeling of letdown after the experience is over.

It should not be construed from this that the team operation is smooth sailing. Students' professional egos are challenged and threatened at a formative stage of their development and this is never an atraumatic experience. A student physician's leadership role is challenged when it is obvious that particular student is able to function only in the "technician" role to which Dr. Gilbert referred at this meeting last year,<sup>6</sup>

. . . The physician of the near future must function as a technician and accept this role, or he must function as a true professional creating new health workers where needed, organizing about him new people and techniques to improve the care of his patients.

Student nurses come to the realization that other health professionals also are imbued with concern for total patient care. Social work students come to



appreciate that physical therapists, while laying on their hands, also have concern for the social environment to which their patient will return. Dental hygienists come to recognize that there are a lot of other areas of the body that quite a few other health professionals are concerned about.

These experiences nevertheless convince us that we are accomplishing something toward orienting these students to the team concept. Some evidence for this is a criticism of their total educational program, its lack of team learning which they voice as, "Why so late in our educational experience? Why only in community health? Why not a part of our entire medical center training?"

Many institutions are working to remove the barriers between professional disciplines in an attempt to promote the team idea. Some new and some old medical educational centers are revamping their whole philosophy, even their name, to reflect the broader concept. Thus there emerge the health science centers or medical centers rather than colleges of medicine or medical schools, and the trend can only be lauded.

However, many so-called team learning experiences are really for the *student physician*, his learning to work with and "use" the team, and not a learning experience for the whole team. Nurses, too, talk about the team environment in which they are learning, but, strangely enough, other members of the so-called teams are unable to recognize the same environment in a team context.

Generally, the newer class of students are way ahead of us, at least in their desire to break down the walls of professionalism. I was on a faculty committee charged with setting up a convocation of all the incoming freshmen of the five colleges within our medical center last fall. By the time of our second meeting, we realized the hypocrisy of our position of trying to create something for our students we knew didn't exist among ourselves.

At our third meeting we called in student representatives from each of the colleges, were very frank with them as to our dilemma, and asked them what they would do. We were right about one thing—they didn't want any more *talk* about the team.

They have since gotten involved in a serious program of health advocacy in some of the ghetto areas of the city, working as interdisciplinary teams.

But it is bringing coals to Newcastle to talk of health student team activities in Kansas. More power to them. I am only chagrined at their greater sensitivity to the need for preventing the walls of professionalism growing up around them.

There is one energetic faculty-instituted program now in its third year at the health sciences center of the University of British Columbia in Canada.<sup>7</sup> I

would mention it especially because of its very carefully studied approach. Szasz and his committee recognized some of the problems inherent in the process of socialization in the team approach and have realistically set their goals toward achieving only *interprofessionalization*—as they call it—of all students who are potential members of the health team at the undergraduate level. By interprofessionalization they hope to develop a mutual understanding and appreciation of the contribution of each professional group in the health picture.<sup>8</sup>

We refer to our objectives as achieving sensitization of our students to the team concept, hopefully the development of an awareness and a preference for the team approach to health delivery.

In the beginning we were apologetic in talking about the team approach in community health because of its seeming limited field of application. However, our concept of community health has proven to be adequate and we think now this may be the most appropriate learning environment in which to introduce the team concept. (I would add, however, we believe an exposure early in their education to the *analytical* community health study followed near the completion of their training with an experience in a model community health *delivery* setting would be the ideal.)

We are firmly convinced of one thing—the learning experience attains its goals when *all* the team members learn together as peers. This does not imply peers in knowledge or skills. It means peers in learning to function together as a team.

Let me make one judgment of our program, and I believe others have recognized the same for theirs. At best it is a transitory experience—to borrow a mod term, a "happening"—and that is all. It arouses feelings, it creates desires, it raises expectations. Then it is over. Because at this level of professional education there are few places to go for the new health professionals who may be convinced of the rationality of the team approach to the practice of their profession after graduation.

The student-physician follows his "calf-path" of graduate education—internship and residency—where, instead of cooperation, he will fight tooth and nail for his place in the sun among his medical confreres, where he will learn to achieve sort of a concordat with the nurse, will learn to tolerate and be tolerated by the social worker, and learn to "use" his paramedical personnel.

The other health professionals, upon graduation, enter immediately the market world of the health delivery system into which another post-residency physician has emerged. By this time, thoroughly exalted in his own view, if not as lord-of-health at least as the captain of health, the physician then proceeds to gather around him his ancillary personnel and

embarks upon the business of delivering medical care. Where is the team?

What I am implying is that the institutionalization of the health team in the mainstream of our health system will only be accomplished when the team approach is seriously introduced at a *graduate* level of education for all team members.

The last of the reports referred to previously, that on *Meeting the Challenge of Family Practice*, would seem at first glance to suggest the educational environment where this could occur. The family practitioner is proposed as the solution to the crisis in our health delivery system, but not alone. One of his three chief functions is to be "leader or coordinator of the team that provides health services."<sup>9</sup>

However, neither this nor any of the other excellent proposals for the preparation of the family practitioner in the remainder of the report gives serious consideration to the education of all the team members for team practice. Some family practice residency programs are building in experience for the physician to be trained in "utilization of community resources and allied health workers where appropriate for the best patient care."<sup>10</sup> But this is hardly the language or the philosophy that is likely to promote the team approach among sensitized health professionals.

So we are right back where we started from, talking about but doing little about establishing the team as an institution of our health delivery system.

Perhaps what we need is primary care *team* residency in medical and allied health education.

## References

1. National Commission on Community Health Services, *Health Is a Community Affair*, Harvard University Press, Cambridge, Mass., 1966.
2. Coggeshall, Lowell T.: *Planning for Medical Progress Through Education*, Association of American Medical Colleges, Evanston, Ill., 1965.
3. Citizens Commission on Graduate Medical Education, *The Graduate Education of Physicians*, American Medical Association, Chicago, Ill., 1966.
4. Ad Hoc Committee on Education for Family Practice, *Meeting the Challenge of Family Practice*, American Medical Association, Chicago, Ill., 1966.
5. Eichenberger, R. W. and Gloor, R. F.: A team approach to learning community health, *J. Med. Ed.* 44:655-662, August, 1969.
6. Gilbert, F. I.: The organization of medical practice, *J. K. Med. Soc.* 70:358, August, 1969.
7. McCreary, J. F.: The health team approach in medical education, *J.A.M.A.* 206:1554-1557, November 11, 1968.
8. Szasz, G.: Interprofessional education in the health sciences, *Milbank Memorial Fund Quarterly*, 47:Part 1, 449-475, October, 1969.
9. Op. cit. p. 7.
10. Ibid. p. 24.

23rd Annual

# MIDWEST CANCER CONFERENCE

FOR PHYSICIANS

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Bernard C. Korbitz, M.D.—Associate Clinical Professor of Medicine and Hematology, University of Wisconsin Medical Center, Madison, Wisconsin. *The Laboratory—New Diagnostic Methods or Latest Tools for Treatment*, Friday, 9:15 a.m. and *The Future of Management of Leukemia*, Friday, 3:45 p.m.

Robert W. McConnell, M.D.—Chairman, Board of Chancellors, The American College of Radiology, Dallas, Texas. *Nuclear Medicine Procedure Aids in Staging of Cancer Patients*, Friday, 9:45 a.m. and *Carcinoma of the Thyroid—A Program of Treatment*, Friday, 2:00 p.m.

James W. Daly, M.D.—Director, Tumor Division, Department of Obstetrics-Gynecology, College of Medicine, University of Florida, Gainesville, Florida. *Carcinoma in Situ Cervix: The Problems of Diagnosis & Treatment*, Friday, 10:30 a.m. and *Lesions of the Vulva*, Friday, 2:30 p.m.

John Spratt, M.D.—Director and Administrator, Ellis Fischel State Cancer Hospital, Columbia, Missouri. *Carcinoma of the Breast—Its Management*, Friday, 11:00 a.m. and *The Small Cancer of the Bowel*, Friday, 3:15 p.m.

Ben Trump, M.D.—Department of Pathology, School of Medicine, Duke University, Durham, North Carolina. *Virology and Its Relationship to Cancer*, Saturday, 9:00 a.m.

Charles F. McKhann, M.D.—Professor of Surgery, University of Minnesota, Minneapolis. *Immunological Aspects of Cancer*, Saturday, 10:15 a.m.

R. Neil Schimke, M.D.—Assistant Professor of Medicine & Pediatrics, University of Kansas Medical Center, Kansas City, Kansas. *Genetics—Its Role in Cancer*, Saturday, 11:15 a.m.

Barth Hoogstraten, M.D.—Professor of Medicine, Director, Clinical Oncology, University of Kansas Medical Center, Kansas City, Kansas. *The Challenge of Cancer Education: The Medical Student and Practicing Physician*, Friday Luncheon Speaker, 12:00 noon.

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# Medical Education

## *What Are the Student's Responsibilities?*

**RICHARD D. WILLIAMS, M.D.,\*** *Minneapolis, Minnesota*

THE RESPONSIBILITIES of the student in medical education have traditionally been few and only of an academic nature. It was the student's task to absorb the knowledge emanating from his professors and to be ready to regurgitate that knowledge while on rounds, or on a written examination. Little else in the way of responsibility or activity was permitted the student. Participation with his faculty in formulating or evaluating his individual or collective curriculum, participation with private physicians in county or state health programs, or participation with the community in a public health program were thought not to be within the purview of the student. No longer is this true. Today's medical student is not willing to accept merely a passive role in his educational process, nor is he willing to accept that he has no role, either in the discussion and implementation of community and state health programs or in participation in his county and state medical societies. The students of medicine have been silent far too long.

I am sure that students in the past have seen the same problems in medicine that we see. For many reasons, however, they were not vocal about these problems, or did not see it as their responsibility to attempt alleviation of them. The present students of medicine are not so inclined. We live in an age of vociferousness. We not only feel free to differ with our professors, but to actively set about to change the portions of our educational and medical environment that we see as inadequate or lacking. Therefore, we feel we have the responsibility not only to become competent physicians, but to use our talents to alter constructively the present educational system and health care system so that they both are responsive to the needs of medicine and of the American people. For our actions to date, we have received opposition and even a label, the "activists"—a term that to most of you, I imagine, and I know to a fair number of our faculty, connotes negativism and destruction, rather than the positive constructivists we are attempting to be.

In the next few minutes I would like to tell you what the students of your medical school have considered their responsibility over the past four years.

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\* At the time this presentation was given in May, 1970, Dr. Williams was president of the Kansas Chapter of SAMA at the University of Kansas School of Medicine. He is now serving his internship at the University of Minnesota Hospitals, Minneapolis.

Most of our efforts have been expended in the area of medical education. Obviously, this is the segment of medicine we are closest to and is the area most distressing to us. As it is in most universities and medical schools, we at the University of Kansas Medical Center are in the midst of an educational revolution. The traditional, stereotyped, anachronistic system of education is being replaced by a more contemporary and functional one.

What are the problems in medical education? First, of interest to us, are the entrance requirements and procedures. Either because of the requirements themselves or the advice of misguided premedical advisors, or perhaps out of fear, the majority of us spent an inordinate amount of time learning the biological and chemical sciences as undergraduates, to the exclusion of the social sciences. We have found this to be a needless waste of college time and have sought to change the entrance requirements and premedical advice so that the students of broader educational backgrounds may seek entrance to medical school. We have also been concerned about recruitment of minority groups as members of the medical classes. One of our students has traveled to a number of the state institutions recruiting prospective medical students. We have offered our assistance as tutors to help those who may be less prepared for medical school. To date, this program has not gone well. The problems being, of course, where do we find qualified members of these groups, and if we cannot find those qualified, should we then alter our requirements and admit those students who are less qualified than members of the majority. We are working closely with the faculty on this problem, but we both admit we have no ready solution.

Second, upon entering KUMC we found there was absolutely no orientation of students to medical school or medicine in general, for that matter. We were met by the dean of students for a brief period, but nothing was said in the way of preparing us for our ordeal or for the broad concepts of medicine. Last year, the Student American Medical Association (SAMA) at KUMC asked for a block of time at the beginning of the freshman year to orient these students as best we could to the university and medicine. Through our efforts, the administration planned with us a program that covered medical school, organized medicine, most of the fields of medicine,



and a broad spectrum of contemporary medical problems and topics. This program was successful and is going to continue.

One of the most monumental problems we face is that of the curricular structure. As you know, the format of two years of basic science and two years of clinical medicine has been with us for more than 50 years. We found the basic science portion of this curriculum to be abominable. Those first two years utilized none of the zeal we had for humanitarianism, nor for the idealism we held for patient care. Instead, we were shackled to the lecture hall, where we were bored with highly sophisticated and penetrating basic science knowledge that seldom weaved a thread of correlation or relevance to the clinical practice of medicine. More distasteful still was the fact that we rarely saw patients, and if we did, we were herded by to view the captive as if he were in a zoo. Within this framework, we learned a great deal about the enzymes within a lysosome, the uses of the Fick diffusion equation, and even the molecular structure of the bacterial cell wall. But, we learned very little about people and their health problems. To alleviate some of these problems, we started evaluating, by written poll of the class, all of our courses at their conclusion and presenting our findings to the department chairmen. At first, the evaluations were viewed quite skeptically by our professors. Later, many of them took it upon themselves to send out evaluation forms and then to attempt to make their respective courses responsive to the constructive feelings of the students. For the most part, I think we have a very good relationship with our professors on this matter. We understand that not all we ask will be granted and they understand we are sincere in our efforts to help them make our education better.

Further, in response to these problems, we began two years ago to take a class census as to the most respected and appreciated teachers. Last year and again this year we gave awards at our student-faculty ball to all of the professors so chosen. This has been more than well received by them. We think it has served as an impetus to those receiving awards to do an even more outstanding job, and to those who don't, to upgrade their efforts.

In answer to the problem of inadequate early patient contact, we set up a program called the sophomore-junior preceptorship. It entails a junior or senior medical student inviting a freshman or sophomore student up to the ward to discuss the upperclassman's patients. As a team, they would completely review the patient's chart, look at any x-rays and examine the physical findings of the patient, and then discuss the diagnosis and treatment of that patient. This proved to be quite useful, to the point that the dean of students set up an elective program for the under-

classmen to accomplish the same end, with staff men being the instructors. Last fall, as a further outgrowth of this program, the freshman medical students began spending one morning a week with senior medical students in the medicine clinic, interviewing and examining patients with them. It should be pointed out that the technique of utilizing upperclassmen for instructors is not a new approach, for it is the same as in the medical student-resident relationship, only at a lower level. It is beneficial in two respects. The underclassman learns a great deal and is stimulated to learn more, while the upperclassman is challenged to know his medical material well. We feel this is a concept that could be used to more advantage in our formal educational system.

During this initial two-year period, there was an attempt to present preventive medicine and community health. It was also during this period that our preventive medicine department threatened, became inevitable, and finally aborted. To many of us, this was a grave sequence of events, for we had been quite interested in community medicine and had just begun our Conference of Student Professional Organizations (CSPO), which, as you know, received two grants from the AMA to study health care delivery in Kansas City. The loss of the preventive medicine department was like losing our only friend, literally. The CSPO grew out of our concern that the university was not involved at all in the community—educationally or otherwise. We felt that it should be the responsibility of the university to lead in the delivery of health care to indigent Kansas Citians as well as to provide the students a laboratory for the study of community health. The university felt quite differently, so we began our own projects that we hoped would some day be incorporated into the formal curriculum. We started three clinics; a sex education program for inner-city youths and later for their teachers; participated with community action groups; set up youth centers, and at least 30 other projects at one time or another. Most of our energies were spent learning about the many private, federal, and municipal agencies that were flailing about attempting to help the indigent people. Another good bit of our time was spent understanding the poor—their priorities, their prejudices, and their attitudes toward health care and life in general. A lot was gained personally by those experiences, but not much was gained in our goal for the medical center as they still have not taken up this program. They have, however, begun to rebuild a department of community medicine. In exercising our interest in this field, we asked to have a student member on a search committee for the new chairman of the department. To date, we have been flatly refused.

Also, near this time, KU began searching for a new chairman for the department of surgery. Again,

we asked to participate as a member of the search committee. This time, the faculty members on the committee said they would resign if a student member was allowed to participate. We now have a separate committee that meets with candidates and passes its recommendations on to the chancellor, as does the faculty committee. We plan to further pursue student representation on all faculty committees that affect us.

Another problem we have attempted to solve is that of the lock-step existence of the clinical curriculum. Medicine is becoming far too individualized to expect all students to follow one course and one course only through medical school. We felt there should be some choice as to courses taken in the clinical years, beyond, of course, the minimal basic curriculum that we all would take. In other words, more elective time with a large number of excellent elective opportunities should be provided.

We also felt that since a number of our students were interested in family practice our university should provide a mechanism for that study. The proposed family practice and community medicine program now being developed at KUMC is due, in part, to a number of energetic SAMA members who met with leaders of the American Academy of General Practice and the administration of the university in order to provide the program.

In the clinical years, the student found a number of other problems. It was during these two years that the student finally hoped to become an active participant in the patient care team. We soon learned it was our duty to draw bloods every morning, write histories and physicals (most often to be read and critiqued by ourselves), write consultations, and do all manner of nursing duties. Then, we were either not present while discussion of the diagnostic work-up and treatment of our patients was held, or if present, were not involved in the discussion or asked what our opinion might be. We felt relegated to a very minor role in patient care on a good number of our clerkships.

One very large gap which we saw in those final two years was the lack of contact with private physicians. Due to the referral nature of our hospital, we saw a number of very difficult patient problems, but common problems were rarely seen. This is neither altogether good nor bad. But, we felt that at the student level it should be mandatory to become acquainted with the practice of medicine as it is encountered outside the medical center. As you know, we do have a one-month experience with private general practitioners in our senior year, but this is not enough. We feel very strongly that the pendulum has swung too far to the fulltime academicians being our only instructors and needs to swing back toward a healthy blend of academicians and private practitioners.

Partly in recognition of these curricular problems and partly in response to our impetus, the faculty began working in 1967 to formulate a new curriculum for KUMC. Many of you have been involved with this—not enough, however. It was not until early 1969 that we became formally involved, even though we had been lobbying for certain changes all along. Finally, last fall the administration was presented with what we think is a superb curriculum. This curriculum will alleviate, or at least partly so, a number of the problems I have pointed out.

Students have other areas of interest as well. We have been concerned, over the past few years, about the minimal contact that we have had with organized medicine. We feel the responsibility to familiarize ourselves with national and state society programs, and, if allowed, to work side-by-side with Kansas physicians in their work to provide better health care and the utilization of such in Kansas. We very much hope to be included in the future as members of the Kansas Medical Society.

We have also been interested in the budget of the University of Kansas Medical Center, for many reasons. As you know, the state financially supports KUMC to the tune of approximately 25 per cent of its budget. The other three fourths is provided by receipts of grants or patient care provided by our professors. As you also know, KUMC presented to the legislature this year a larger budget to cover operating costs as well as a supplemental budget to support the new curriculum, the family practice program, and an increase in the size of the medical student class. All of these items are of extreme importance to us and the future of Kansas medicine. Early this spring we learned that the legislature had planned to cut our regular budget and only supply a token amount of the supplemental budget. We hurriedly launched an advertising campaign aimed at the public, the private physicians, and the legislators of Kansas. This campaign netted us an appointment to appear before the House Ways and Means Committee, where we told them of the desperate need for the increased appropriation. Directly following this meeting a bill was introduced granting the University of Kansas Medical Center an additional \$1,068,000 to be used toward increasing its intern and residency programs throughout the state. This is, of course, the first step toward implementation of all the new programs.

This has not been a complete summary of our activities over the last four years, but it certainly is representative of the concern and responsibility we have felt.

In answer, then, to the question, "What are the responsibilities of the student of medicine?" I feel they are as broad as the student's interest and commitment may be. Not only do we have the responsi-



bility to become knowledgeable physicians, but we also have the responsibility to be leaders rather than only followers in our educational environment. We have the responsibility to improve medicine at every possible step—not only in our own sphere, but in the sphere of our present and future patients as well. Students have a great deal to offer medicine, before they become physicians as well as after. We feel the responsibility to do both. Further, as the student begins to share in the shaping of his destiny and of the future of medicine, he must of necessity be capable and willing to accept the enormous weight of responsibility for his actions. If he cannot, or does not, then by raising his voice in proposing or opposing at all, he has done himself, his patients, his profession, and future students of medicine a great disservice.

That's the end of my formal remarks. I do, however, have a couple of thoughts that I would like to leave with you. This concerns the great opportunity that you, as private physicians in Kansas, have. I'm not sure you are aware of the fact that a great number of changes have occurred recently at our university—changes that will affect the education of medical students, the future medical care of Kansans, and all of you. Among these changes are the following:

1. I have already mentioned the new curriculum. It will be starting soon and it will depend a great deal on what private physicians in Kansas do and say in support of it.

2. Two department chairs have recently been vacated. One of them has been filled, one of them is presently being filled. There is a possibility that another department chair will be vacant in the near future.

3. The dean of the University of Kansas Medical Center has recently resigned. His job will be divided, with two new men taking these positions.

4. The possibility of establishing outlying training centers for medical students is already near reality here in Wichita, and may be in other Kansas cities.

5. The students of medicine are now ready, willing, and anxious to work with private physicians.

Gentlemen, you have a great responsibility and a great opportunity now to become involved in the education of medical students—more than you have had in the past. I realize the town and gown problems have been great, but I think we can and should transcend all of that in the next few years, for the students need you and certainly KUMC needs you. I would hope that you will rise to the challenge. Don't wait for someone to ask you to help. Begin now. There is so much you can offer to us as medical students and so much you can offer to the education of future medical students.

## FOUR EASY STEPS TO COLLECTING FROM THE ARMY

Here are four easy steps for members of the civilian medical profession to take in billing the Department of the Army for professional services rendered to military personnel requiring emergency treatment while absent on authorized leave from their duty stations.

1. IDENTIFICATION. All members of the Army, who are on active duty, should be carrying some sort of identification showing their full name, rank or grade, social security account number or service number, and duty station. This may be an Armed Forces Identification Card, an authorized pass, official orders, Request & Authority for leave (DA Form 31) or travel orders. This document should be copied and retained for use when submitting the bills for service.

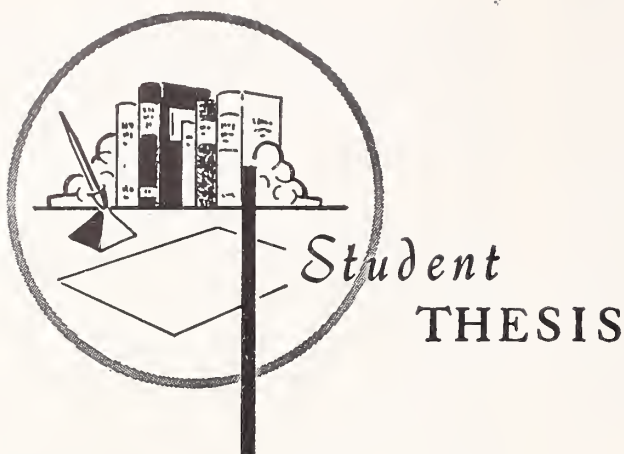
2. NOTIFICATION. It is very important that the patient's whereabouts and physical condition be made known immediately to the nearest Army Surgeon's Office (listed below) when emergency civilian medical treatment is required. The telephone call may be made by the patient or a member of the hospital staff. A record should be made of the date and time of the notification, as well as the name of the headquarters called, and the full identification of the person accepting the call for the Army. The cost incurred in notifying the military authority is a legitimate charge to the Army, and should be included with the medical bill. (Personal calls made by or for the patient for other purposes cannot be collected from the Army.)

3. BILLING. The bill should be submitted in quadruplicate showing *all* the information acquired in number 1 above. With the inclusive dates of service, the bill should list the individual charges for each type of service (ambulance, diagnostic, medical, surgical or other) together with a signed certificate embodying the following statement: "I certify that the services were necessary in the treatment of the above named person; that the services were as stated; and the charges are not in excess of those customarily made in this vicinity."

4. MAILING. The bill should then be mailed to the Army Surgeon for the area in which the service was rendered. The address for this area is listed below.

### HEADQUARTERS FOURTH U. S. ARMY

Commanding General  
Fourth United States Army  
ATTN: Surgeon  
Fort Sam Houston, Texas 78234  
*Telephone number*  
Area Code 512  
Duty hours: 221-4323 or 221-2013  
Off-duty hours: 221-2745



## *Galactosemia*

TELL B. COPENING, M.D.,\* *Wichita*

### **Introduction**

GALACTOSEMIA is a disorder of galactose metabolism which makes itself apparent shortly after birth. Although the person who is affected with galactosemia will have the defect all of his life, this disease is usually classified in the newborn period. Clinical manifestations are directly related to the amount of galactose in the diet, which is considerable in the infant milk diet. Like several other inherited metabolic defects, the damage, or possible death, which might result from galactosemia is correctable with proper management.

It is the purpose of this paper to discuss the various clinical and theoretical aspects of galactosemia and the future of the disease.

### **History**

The patient, a one-month-old female, was admitted to the University of Kansas Medical Center because of failure to thrive. The pregnancy had been essentially uncomplicated with the exception of a urinary tract infection during the fifth month of gestation. The delivery was normal, at term. Birth weight was six pounds, thirteen ounces. The child had spit up one to five times per day since she was born. She had been fed Similac, 1.5 ounces every two hours around the clock. There was no history of definite vomiting or diarrhea. The stools had been normal. The mother stated that the child had lost one pound since birth.

\* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. Copening completed his internship at Wesley Medical Center, Wichita, in June, 1970.

Before entering KUMC, the patient had been hospitalized at another hospital since birth. The mother stated that her family doctor told her that the only positive test was a trace of albumin in the urine and a small amount of pus. A right ear infection and eye infection were present on the third day of life. These were treated with three unknown antibiotics and penicillin. Jaundice was noted on the third or fourth day of life, which cleared up one day later.

Both parents were living and in good health. The patient had one older brother, age three, who was healthy with no history of failure to thrive. There was no family history of diabetes, heart disease, tuberculosis or nervous disorders.

### **Physical Examination**

Vital signs: head, 35 centimeters; chest, 29 $\frac{3}{4}$  centimeters; heart rate, 100 per minute.

The patient was a malnourished, white female who appeared alert and active. Her pupils were equal, round and reacted equally to light. Ears revealed normal tympanic membranes. The nose was clear, throat was not inflamed, and the mouth was not unusual. The chest and lungs were clear to auscultation and percussion. Examination of the heart revealed a normal sinus rhythm without murmurs or thrills. The liver was palpable 4 centimeters below the right costal margin and moderately firm. The spleen was not palpable. The extremities were active. The fifth fingers were curved, especially distally, and appeared to have very little subcutaneous tissue. The genitalia were normal. The rectal examination was within normal limits.



Summary of Laboratory and X-Ray

Skull films, negative; KUB film, negative. An IVP was attempted, but was unsuccessful. Bone age was consistent with that of a newborn child. Chest x-ray, negative. Admission urinalysis: pH 5.0, specific gravity 1.021, 1+ albumin, 2.8 per cent sugar, the Clinistix, positive for glucose; loaded with bacteria on a voided specimen. On June 29, 1963, the white count was 23,970 with 10 grams hemoglobin, 56 segmented cells, 28 lymphocytes, and 15 monocytes. On June 30, the urine albumin was 1+, sugar, 1.6 per cent, Clinistix was negative, and acetone, negative. Also on June 30, 1963, the BUN was 12; blood sugar, 164 milligrams per cent; CO<sub>2</sub> was 20, sodium was 141; potassium was 5.7; chloride was 113; calcium was 4.9 mEq per liter; phosphorus was 3.4. On July 2, the white blood count was 18,000 with 9.1 grams hemoglobin; the blood sugar was 162. On July 5, the spinal fluid protein was 35; sugar, 144; with 80 white cells and 88 red cells, all crenated. Glucose tolerance tests on July 5: fasting, 199; one-half hour, 220; one hour, 179; two hours, 141; three hours, 128; and four hours, 93. Alkaline phosphatase, 10.4; transaminase, 144. Serum proteins, 5.4 grams per cent, with albumin, 65 per cent; alpha 1 globulin, 4 per cent; alpha 2 globulin, 8 per cent; beta globulin, 10 per cent; gamma globulin, 13 per cent; PBI greater than 29 micrograms. The spinal fluid culture was negative at 72 hours. On July 8, the blood total reducing substance, 221 milligrams per cent; true glucose, 29 milligrams per cent; hemoglobin, 8.8 grams. The result of urine chromatography is shown in *Figure 1*.

Hospital Course

The patient was admitted and a diagnostic work-up was started. The baby's weight stayed approximately stable. The admission weight was 2,645 grams. A diagnosis of galactosemia was made on the basis of the significant galactosuria and large discrepancy in true blood glucose and total blood reducing substances. This was determined to be due to galactose. On July 9, the patient was started on a Holzel formula containing rice, cereal, eggs, sugar, water, and salt of bicarbonate. The formula (which is galactose-free) contained 23 calories per ounce.

HOLZEL DIET	
	Calories
18 T. rice cereal .....	156
3 eggs .....	219
3 T. sugar .....	180
Total .....	555
Add water to total of 24 ounces. Supplement with calcium and vitamins.	

The formula was supplemented with calcium gluconate and vitamins. The patient was started on the formula and appeared to take it without vomiting. A weight gain of approximately 150 grams was noted. The child was discharged from the hospital and seemed to improve on the galactose-free diet. The Holzel diet was continued at home, as instructed, along with 500 milligrams of calcium gluconate and Dapta vitamin 0.5 cubic centimeters daily. A repeat

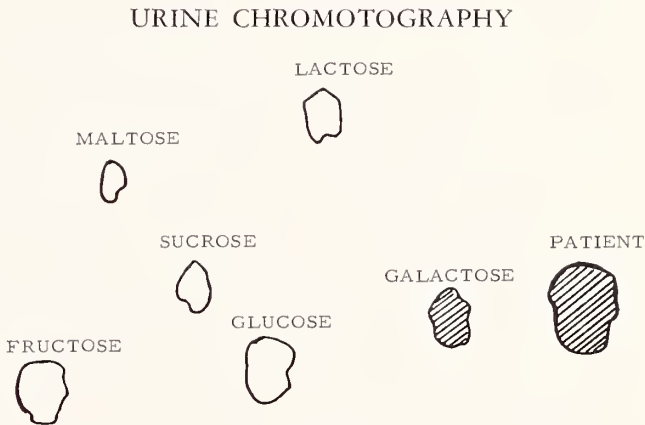


Figure 1

eye examination revealed early cataracts in both the left and right eye, the left eye being greater than the right eye.

Blood samples were sent to Dr. David Hsia in Chicago for determination of gal-I-P uridyl transferase activity. The following results were reported. (However, the accuracy of the results was questioned because of the delay in the processing of the samples.)

Family Results	Ranges	
	Units	Units
Patient .....	3.5	Normal .....
Mother .....	5.0	Heterozygotes ....
Father .....	7.0	Galactosemic ....

Follow up visits:

- August 3, 1963
  - Height 21.25 inches
  - Weight 7 pounds, 10 ounces
  - Cataracts still present but improved
  - Liver palpable 3 centimeters below right costal margin
  - Urine negative for sugar (glucose or galactose) or proteins
- October 26, 1963
  - Height 23 3/4 inches
  - Weight 11 pounds, 10 1/2 ounces
  - Liver still slightly palpable, but smaller
  - Cataracts appeared to be gone
  - Urine was negative

September 5, 1964  
 Age 16 months  
 Height 29.75 inches  
 Weight 20.5 pounds  
 No hepatomegaly  
 Urine negative  
 Patient was walking

### Clinical Aspects of Galactosemia

Galactosemia is an inherited enzyme (gal-1-P uridyl transferase) deficiency. It manifests itself early in life. Babies affected with galactosemia appear normal at birth. However, the affected child, when fed an ordinary milk diet which contains large amounts of galactose, begins to show clinical symptoms within a few days to weeks. The first signs are subtle and nonspecific. They include vomiting, lethargy, and generalized failure to thrive.

These symptoms, if no treatment is instituted, are followed by more severe manifestations of the disease: hepatomegaly, jaundice, cataracts, ascites, edema, and if allowed to continue untreated, death.<sup>1</sup> If the disease is not fatal in infancy, and it is *not* always fatal, mental retardation of varying degrees will probably occur.

Sparkes, Beutler, and Wright<sup>2</sup> described a 24-year-old, white, mentally retarded male who was found to be galactosemic, having no galactose-1-P uridyl transferase (gal-1-P UT) activity. His urine was negative for reducing substances. He had bilateral cataracts but no liver involvement, and his general body growth was considered normal. His parents were tested for enzymatic activity, and both fell within the heterozygote range.

Two reasons for this patient's being able to survive were postulated. First, for some reason he might have been exposed to less than usual amounts of galactose or perhaps he had a concomitant deficiency of lactase to convert lactose to glucose and galactose. Second, there are alternate pathways which can be used to metabolize sufficient amounts of galactose to prevent death, but not without complications.

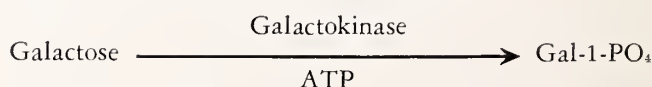
Brandt<sup>3</sup> studied the frequency of heterozygotes (carriers) in normal populations in an attempt to get a better idea of the true incidence of the disease. In England and Denmark at the time of his study, the incidence was given as one galactosemic child in 70,000 live births. However, because of the great variation in the spontaneous course of the disease, the true incidence was thought to be much higher. He determined the gal-1-P UT activity in 495 adult blood donors and 47 random cord bloods according to the method of Anderson.<sup>4</sup> Of these 542 blood samples, he found 13 persons with activity in the heterozygous range. Eleven of the 13 families were investigated and in every case other family members with intermediate levels were found. The

heterozygote frequency in this small sample was therefore 11:542 or 1:50. This gives an approximate incidence of one galactosemic child per 10,000 live births. This is obviously a rough estimate, but points out the fact that galactosemia and its variants are more common than once thought.

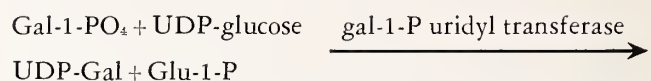
### Biochemistry

A basic understanding of galactose metabolism is essential in comprehending galactosemia. Galactose is taken into the body in several forms. One of the most common, especially during the newborn period, is a component of lactose in milk. Lactose is broken down by an enzyme, lactase, giving glucose and galactose.

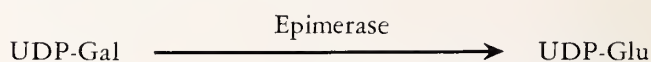
The glucose can be handled in various ways. Usually it is phosphorylated and enters the glycolytic (Embden-Meyerhoff) pathway. Galactose, on the other hand, is metabolized by a pathway all its own. Like glucose, galactose is phosphorylated.



Galactose-1-PO<sub>4</sub> then undergoes the following reactions:



Glu-1-P can then be metabolized further, while UDP-Gal can be epimerized and utilized again in the transferase reaction:



In galactosemia, gal-1-PO<sub>4</sub> uridyl transferase activity is absent. Therefore, large amounts of gal-1-PO<sub>4</sub> build up in the blood. It is felt by most people that, in some way, gal-1-P exerts a deleterious affect on the tissues, being especially hepatotoxic. The exact mechanism of cataract formation and development of mental retardation is not known. It is felt, however, that gal-1-P is the offending agent and that the amount of damage is directly proportional to the gal-1-P concentration in the blood.

### Diagnosis

The diagnosis of galactosemia can be substantiated by measuring the level of galactose-1-PO<sub>4</sub> uridyl transferase activity. This can be done by several methods.<sup>4-7</sup> There are other less specific findings in galactosemia which lead one toward the final diagnosis.

Galactose is spilled in the urine of galactosemic patients along with varying amounts of amino acids and albumin. Commercial test preparations containing glucose oxidase, such as Tes-tape and Clini-



stix, will give a positive reaction *only* in the presence of glucose; thus, nonglucose sugars can be readily suspected. As we saw in our example case, on June 30, 1963, the patient's urine reducing substance was 1.6 per cent and it was Clinistix negative. This meant it was a nonglucose reducing substance. This nonglucose reducing substance was determined by chromatography (*Figure 1*) to be galactose.

The blood level of gal-1-PO<sub>4</sub> is also greatly increased in galactosemia. J. C. Howarth and N. H. Barchuk<sup>7</sup> proposed measuring gal-1-P in blood chromatographically as a screening procedure. Blood levels greater than 10 milligrams per cent are not found in normal newborn infants. These findings, along with the physical findings mentioned earlier, should make one think of galactosemia. Then, the definitive measurement of gal-1-P UT activity can be determined to substantiate the diagnosis of galactosemia.

### Treatment

The treatment of galactosemia is simple, but at the same time difficult to carry out. Complete reversal of all symptoms, provided they have not been present long enough to cause permanent damage, is possible by simply eliminating galactose from the diet. Usually the infant diet, consisting of large amounts of milk, contains large amounts of galactose. Several commercial products, such as Nutramigen (Mead Johnson), have been developed which are free of galactose. This helps to simplify feeding during the formula period, but management becomes more difficult as soon as other foods enter the menu. The severity of dietary control is currently strict during the first three to four years. However, gradual relaxation is sometimes permitted. The optimum length of strict management has not been established.<sup>1</sup>

Fisher, Koch, Donnell, and Graliker<sup>8</sup> tried to establish psychological correlates to strictness of management. They found that excellent dietary control permitted a blood level of gal-1-PO<sub>4</sub> of less than 1 milligram per cent, good control resulted in levels between 1 to 3 milligrams per cent, and in poor control, levels were above 3 milligrams per cent. Levels under 3 milligrams per cent usually permitted normal development. However, under poor dietary control, some psychological correlates were found. Early development and intellectual progress were usually excellent, but older children often exhibited visual-perceptual problems causing academic difficulties in school. Preliminary projective data suggested that the teenage group also faced personality difficulties, reflecting the presence of significant emotional factors contributing to the overall stress in the adjustment of the galactosemic patient.

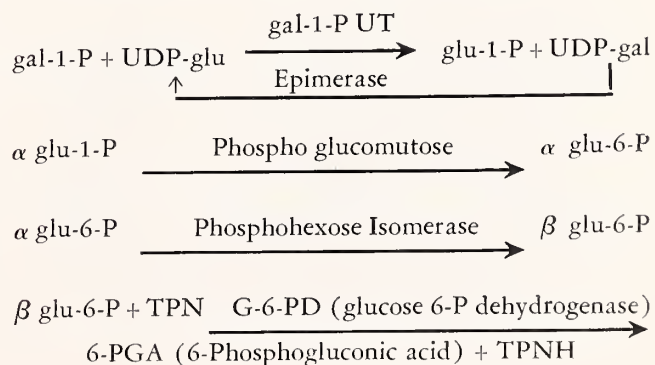
### Screening

The potential for reversing, or better yet, preventing the serious manifestations of galactosemia and the realization that galactosemia is probably much more common than once thought, makes screening for the disease very important. At the present time, the only inherited metabolic disease which is screened for in the newborn period is phenylketonuria. At least three methods have been proposed recently as reasonable screening techniques for galactosemia.<sup>5-7, 9-12</sup>

Probably the least popular of the three was described by Howarth and Barchuk<sup>7</sup> and has been briefly mentioned earlier. The test which they advocate for screening uses blood collected and dried on filter paper cards. The test depends upon the chromatographic quantitative demonstration of blood galactose levels greater than 10 milligrams per cent. In normal infants, concentrations above this level are not found. The test was reported to be economical in material and time.

Another method, first described by Beutler<sup>5, 11</sup> involves decolorization of methylene blue. The test is based, biochemically, on the normal generation of TPNH by red cells incubated with galactose. The TPNH in turn reduces the methylene blue. The entire reaction requires the presence of gal-1-P UT for completion. In galactosemia, no decolorization occurs. Heterozygotes will eventually decolorize methylene blue, but require prolonged time. Gatti, Manfield, and Hsia<sup>6</sup> evaluated this method. They found that the dye decolorization test was an easy and reliable method for the screening of galactosemia in the newborn infant. In a pilot study involving 430 infants, it was found that the decolorization time may be prolonged by low hematocrit values, excessive storage of the specimen, and glucose-6-phosphate dehydrogenase deficiency, as well as the gal-1-P UT deficiency. These factors must be taken into account in interpreting an abnormal result.

Beutler, *et al.*<sup>5, 12</sup> described the most recent rapid screening test for galactosemia. This test was again carried out on filter paper (Whatman No. 1) and based on the following reactions:



Triphosphonucleotide (TPNH) flouresces at 465 mu. Therefore, if all of the substrates and enzymes are present, fluorescence occurs. The amount of fluo- rescence depends on the transferase activity. Hetero- zygotes have an intermediate amount of fluorescence. Nelson and Hsia<sup>9</sup> evaluated the above technique, not only as a screening test for galactosemia but also for G-6-PD deficiency. By consulting the above reac- tions, one can see that if no G-6-PD activity is pres- ent, the reaction will be halted before any TPNH could be generated. This technique, according to their findings, was satisfactory as a screening pro- cedure for detecting galactosemia and G-6-PD defi- ciency in the newborn infants. Their technicians were able to preform 100-150 per day per techni- cian.

An obvious objection to using this technique as a screening test for galactosemia in Negroes, par- ticularly males, is that the frequency of G-6-PD defi- ciency in this group may be as high as 15 per cent.

Beutler, *et al.*<sup>10</sup> compared the dye decoloriza- tion method of screening with the fluorescent spot test. He screened 15,000 newborn infants using both methods. Both were technically acceptable and in

every way satisfactory for mass screening. However, the fluorescent spot test method was found to be technically simplier than the methylene blue de- colorization technique and could be carried out on the blood-impregnated filter paper also used for PKU screening. No galactosemic infants were identified in this survey.

Genetics

Galactosemia is inherited as an autosomal recessive trait. Two families were studied by the author as part of a summer research program. The pedigrees of these families were determined, using the family members available for study. The gal-1-PO<sub>4</sub> UT activities were determined by the following method. One of the family pedigrees is presented in *Figure 2*.

Persons homozygous for galactosemia have es- sentially no gal-1-P UT activity. Carriers for the trait (heterozygotes) have a level of activity inter- mediate between normal and galactosemia.

Method and Materials

The materials used in determining the levels of gal-1-P UT activity were obtained from the Sigma

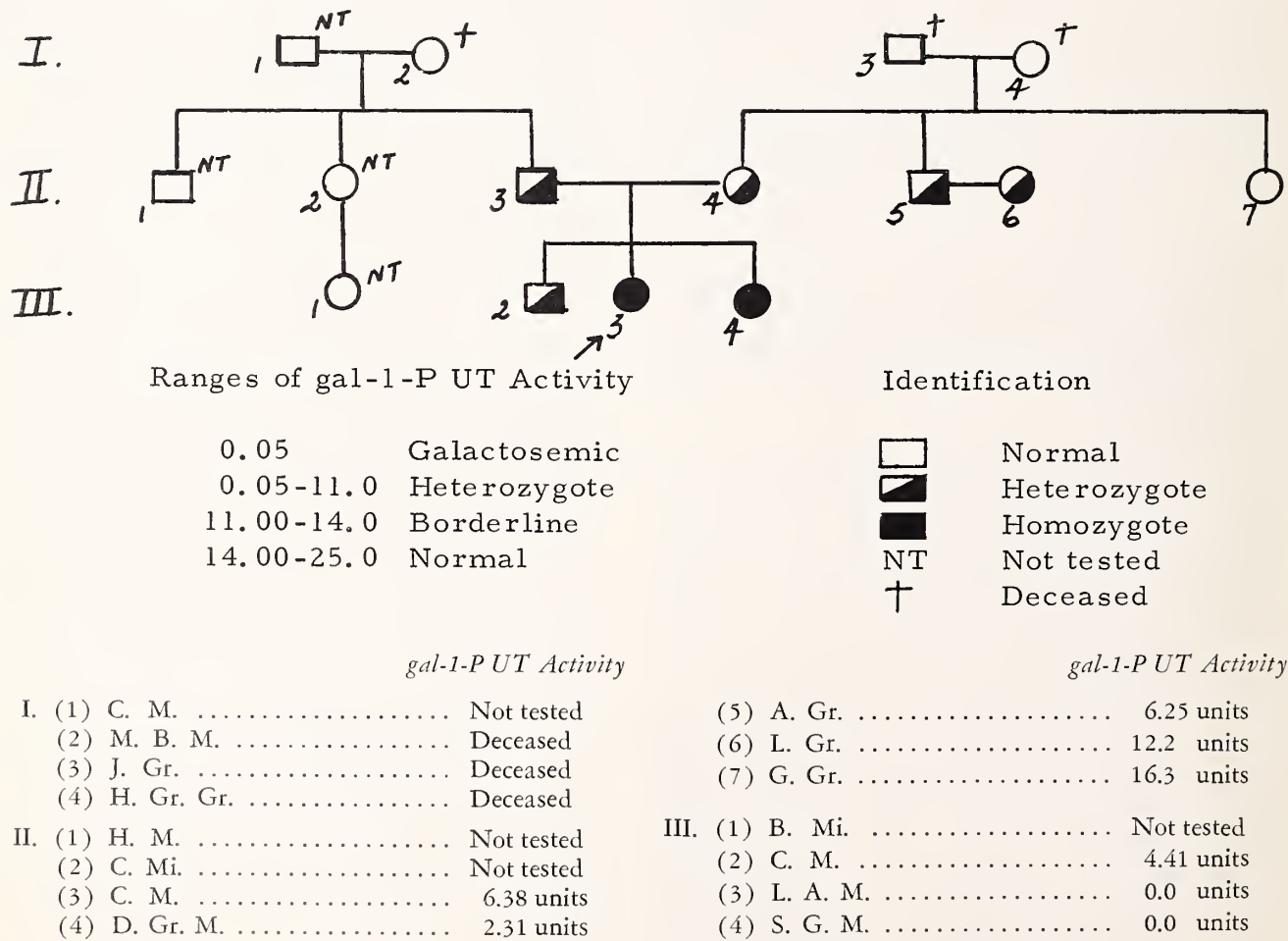


Figure 2



Chemical Company, St. Louis, Missouri. The method, also established by Sigma, was a modification of the Kalckar<sup>16</sup> and Bretthauer<sup>17</sup> techniques.

The determination was performed using an hemolysate of heparinized venous blood. The final value of activity was standardized per gram of hemoglobin. The actual determination was carried out using the following technique:

- (1) Mix: 0.4 ml. Glycine Buffer  
0.1 ml. UDP-glucose
- (2) Prepare two 12 ml. Pyrex centrifuge tubes as follows:

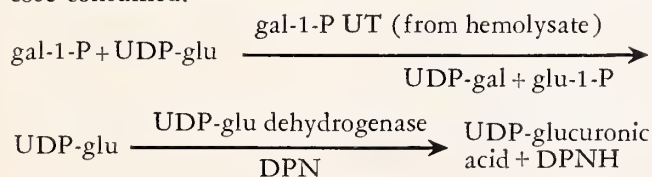
Tube No.	Solution From 1	gal-1-P	Water
1	0.1 ml. (UDP-glu)		0.05 ml.
2	0.1 ml. (UDP-glu)	0.05 ml.	

- (3) Add 0.1 ml. hemolysate to tubes 1 and 2. Incubate 15 minutes at 37 C. Note time.
- (4) Quickly add 0.5 ml. of saline to each tube and place into a boiling water bath for 2 minutes (to stop enzyme activity). Stir each tube rapidly and constantly with a small glass rod.
- (5) Put tubes into ice bath for about 5 minutes. Centrifuge to obtain clear supernatant fluid.

#### Determination of Residual UDP-glucose.

- (1) Pipette 0.2 ml. of supernatant fluid from step five into each of two corresponding numbered cuvettes (1.5 ml. capacity, 1 cm. light path.)
- (2) Add to each cuvette:
  - 0.15 ml. Glycine Buffer
  - 0.10 ml. DPN solution
  - 0.45 ml. Water
- (3) Add to cuvette No. 1 only:
  - 0.10 ml. UDP-glu dehydrogenase
 Mix by inversion (parafilm cover)
- (4) Read and record optical density<sub>340 mu.</sub> (OD) vs. water as reference, at 1/2, 1, 1 1/2, and 2 minutes.
- (5) Read and record OD at 400 mu. at 2 1/2 minutes for turbidity.
- (6) Continue recording OD<sub>340</sub> at 4 minute intervals until a maximum is reached (20-30 minutes). When the OD becomes less than 0.02 for a 4 minute interval it may be ignored.
- (7) Record OD<sub>400</sub> again to correct for turbidity change.
- (8) Add 0.10 ml. UDP-glu dehydrogenase to cuvette No. 2 and take reading at 340 mu. and 400 mu. as for No. 1.
- (9) Plot a curve for each cuvette (time vs. OD). Extrapolate back to zero time for each curve.

The level of gal-1-P UT activity is measured indirectly by determining the amount of UDP-glucose consumed.



In the first incubation tube, there is no gal-1-P. Theoretically, assuming normal gal-1-P UT activity in the hemolysate, no UDP-glu should be consumed. However, occasionally, a small amount of endogenous gal-1-P is present in the hemolysate and some UDP-glucose is consumed. The amount of endogenous gal-1-P will be the same in both tubes and its affect is the same in both tubes.

The second tube contains all of the reagents for the reaction to proceed to completion, consuming all of the UDP-glucose. The *difference* in the amount of UDP-glucose consumed in each reaction gives an indirect measure of gal-1-P UT activity. If no gal-1-P UT is present in the hemolysate, the amount of UDP-glucose consumed per tube will be the same and the difference essentially zero, as would be the case in galactosemia (*Figures 3 and 4*).

In normal samples with normal gal-1-P UT activity, all of the UDP-glucose will be consumed from the second tube. When this is subtracted from tube No. 1 (without gal-1-P), which theoretically should have consumed no UDP-glucose, the level of gal-1-P UT activity is determined.

The correction for turbidity is made in the following manner. If the OD<sub>400</sub> increases during the reaction, this difference is subtracted from the ΔOD<sub>340</sub>. If the OD<sub>400</sub> decreases, the decrease is added to the ΔOD.

#### Variants of Galactosemia

Several variations of the classical form of galactosemia have been described. Hsia<sup>13</sup> compiled the existing types and discussed them in a recent article. One of the better known, the Duarte variant, was first described by Beutler<sup>14</sup> in 1965. Persons who are homozygous for the Duarte variant have approximately one-half normal gal-1-P UT activity. This would be in the same range of activity as heterozygotes for the classical form of the disease. Heterozygotes for the Duarte variant however, have three-fourths normal activity. Both heterozygotes and homozygotes for the Duarte variant are clinically asymptomatic.

It is generally felt that the Duarte variant represents a different mutation in the same enzyme (gal-1-P UT). Hsia<sup>13</sup> pointed out that by electrophoresis, individuals who are homozygous for the Duarte variant show a single band for transferase with a mobility different from that for normal individuals. In the same manner, individuals who are heterozygous for the Duarte variant show two bands for transferase, one corresponding to the Duarte band and one corresponding to the normal band. The same type of

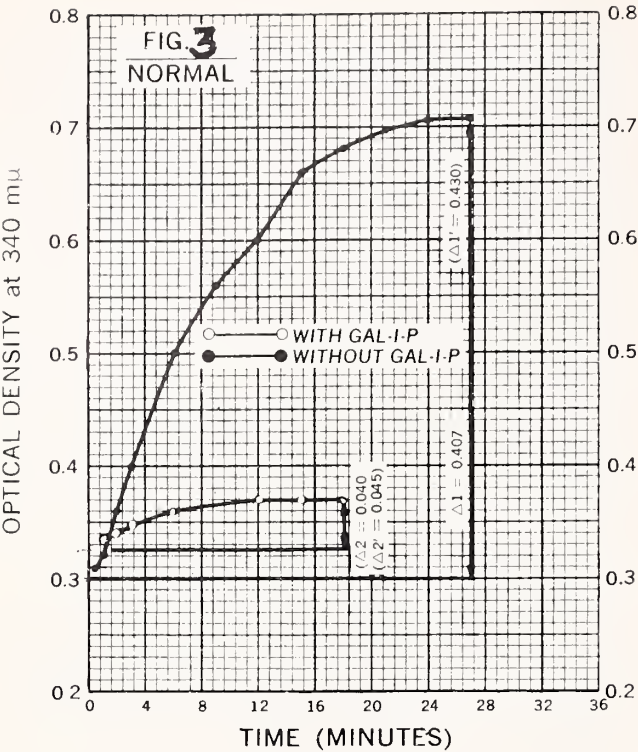


Figure 3

mutation phenomenon is seen in the hemoglobinopathies giving rise to hemoglobin S, C, and E.

Another variant was found among Negroes with galactosemia.<sup>13</sup> The galactose-1-PO<sub>4</sub> UT activity was zero and the early signs and symptoms of classical galactosemia were present. However, galactose oxidation was normal. They developed an alternate pathway for metabolizing galactose, via D-xylulose. It was felt that this did not represent a separate gene defect, but may be an allele for galactosemia or perhaps a modifier gene effect.

In another article by Kelly, Dzierewa, and Baswell<sup>15</sup> other variants of galactosemia were presented. In one family, the parents of galactosemic children were found to have normal transferase activity measured in the leukocytes. This is in distinction to the classical form of the disease in which the transferase

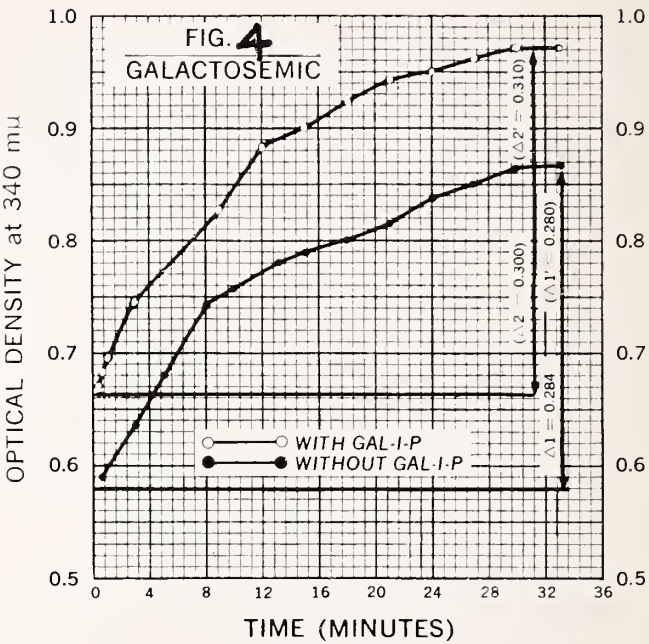


Figure 4

activity in the leukocyte is reduced as it is in the erythrocyte.

Another family study<sup>15</sup> (Figure 5) revealed only one parent of a galactosemic child with abnormal transferase activity. The other parent had transferase activity falling in the normal range. It must be pointed out that there is a wide spectrum of activities, some of which fall in borderline areas giving rise to overlapping of normals and heterozygotes.

Conclusion

In conclusion, many of the various aspects of galactosemia have been discussed. Only a few years ago galactosemia was practically unknown and its effect on infant mortality was considerable. Now that the true incidence of the disease is becoming better known, as is the true nature of the disease, it would seem that screening for the disease is becoming more and more essential. The work of Beutler and others in this area has been a big step forward in making screening for galactosemia practical. Large

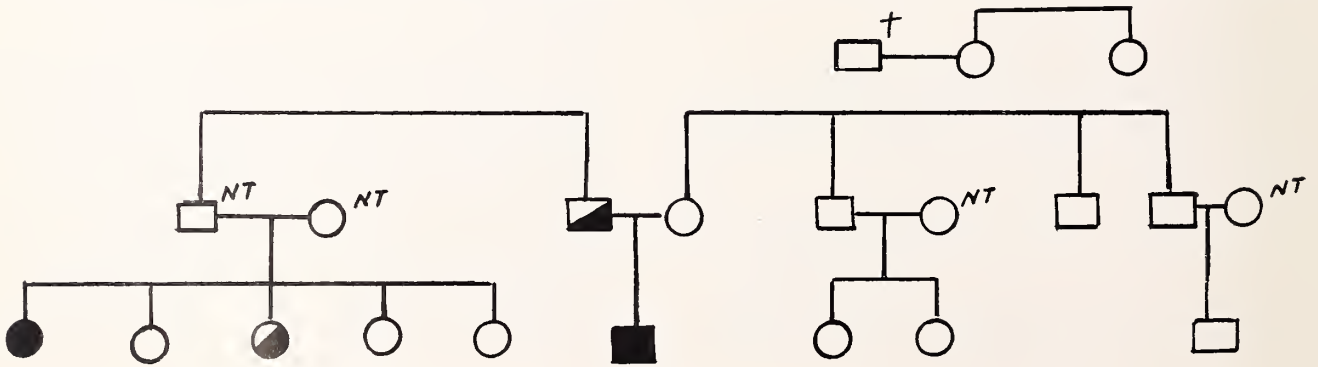


Figure 5  
(See legend, Figure 2)



scale screening for galactosemia will surely find its place in the future of the disease.

## References

1. Beutler, Ernest: Galactosemia. *Am. J. Clin. Nutrition* 21:923-5, September, 1968.
2. Sparkes, R. S.; Beutler, E.; and Wright, S. W.: Galactosemia in a twenty-four-year-old man; Detection by Enzyme Studies. *Am. J. Ment. Defic.* 72:570-3, January, 1968.
3. Brandt, N. I.: Frequency of heterozygotes for hereditary galactosemia in a normal population. *Acta Genetica* 17:289-98, 1967.
4. Anderson, Elizabeth; Kalckar, Herman; Kurahashi, Kiyoshi; and Isselbacher, Kurt J.: A specific assay for the diagnosis of congenital galactosemia. *J. Lab. Clin. Med.* 50:469, 1957.
5. Beutler, Ernest, and Mitchell, Margaret: New rapid method for the estimation of red cell G-1-P UT activity. *J. Lab. Clin. Med.* 72:527-32, September, 1968.
6. Gatti, Richard A.; Manfield, Pauline; and Hsia, David Yi-Yung: Screening newborn infants for galactosemia. *J. Peds.* 69:1126-7, December, 1966.
7. Haworth, J. C., and Barchyk, N. H.: A simple chromatographic screening test for the detection of galactosemia in newborn infants. *Pediatrics* 39:608-10, April, 1967.
8. Fisher, Karol; Koch, Richard; Donnell, George; and Graliker, Betty V.: Psychological correlates in galactosemia. *Am. J. Ment. Def.* 71:116-25, July, 1966.
9. Nelson, Karen, and Hsia, David Yi-Yung: Screening for galactosemia and glucose-6-phosphate dehydrogenase deficiency in newborn infants. *J. Peds.* 71:582-5, October, 1967.
10. Beutler, Ernest; Irwin, J. Russell; Blumenfeld, Charles M.; Goldenburg, Erwin W.; and Day, Robert W.: Field test of galactosemia screening methods in newborn infants. *JAMA* 199:501-3, 13, February, 1967.
11. Beutler, E.; Baluda, M.; and Donnell, G. N.: A new method for the detection of galactosemia and its carrier state. *J. Lab. and Clin. Med.* 64:694, 1964.
12. Beutler, Ernest, and Baluda, Mary Ellen: A simple spot screening test for galactosemia. *J. Lab. Clin. Med.* 68:137, October, 1966.
13. Hsia, David Yi-Yung: Clinical variants of galactosemia. *Metabolism* 16:419-37, May, 1967.
14. Beutler, Ernest; Baluda, Mary Ellen C.; Sturgeon, Phillip; and Day, Robert: A new genetic abnormality resulting in galactose-1-phosphate uridyl transferase deficiency. *The Lancet* 1:353-4, February 13, 1965.
15. Kelly, Sally; Dxierova, Cynthia; and Baswell, David: Another biochemical variant of galactosemia. *Exp. Molec. Path.* 9:23-6, August, 1968.
16. Kalakar, H. M., Anderson, E. P., and Isselbacher, K. J.: *Biochem. Biophys. Acta* 20, 262 (1956).
17. Bretthauer, R. K.; Hansen, R. G.; Donnell, G.; and Bergren, W. B.: *Proc. Nat. Acad. Sci.* 45:328 (1959).
18. Brandt, N. J.; Froland, A.; Mikkelsen, M.; Nielsen, A.; and Tolstrup, N.: Galactosemia locus and the Down's syndrome chromosome. *Lancet* 2:700, 1963.

## ANCILLARY REFERENCES

1. Beutler, E.: Genetics of galactosemia. *J. Lab. Clin. Med.* 68:646-58, October, 1966.
2. Kelly, Sally; Copeland, William; and Almy, Rydia: Gal-1-P UT in Mongols. *N. Y. J. Med.* 67:2714-9, 15, October, 1967.
3. Komrower: Galactosemia. *Proc. Roy. Soc. Med.* 60:1155-7, November 1, 1967.
4. Mathai and Beutler, E.: Electrophoretic variations of gal-1-P UT. *Science* 154:1179, 1966.
5. Thalhammer, O.; Gitzelmanis; and Pantlitschko, M.: Hypergalactosemia and galactosuria due to galactokinase deficiency in a newborn. *Pediatrics* 42:441-5, September, 1968.

## PREPARATION OF MANUSCRIPTS FOR THE JOURNAL

**Exclusive Publication:** Articles are accepted for publication on condition that they are contributed solely to this Journal. Publication elsewhere will be subsequently authorized in the discretion of the Editor.

**Correspondence:** Address all correspondence relating to publication of scientific papers to the Managing Editor.

**Manuscript:** Type double spaced, on white paper, 8½ by 11, with one-inch margins at the top, bottom, and right, and 1½ inches on the left. Submit the original. Call drugs by their generic names. The trade names can be added, in parenthesis, if they are considered important. Keep one copy of the paper.

**Footnotes and References:** Use the style of the *Quarterly Cumulative Index Medicus* published by the American Medical Association, which requires, in the order given: name of author, title of article, name of periodical, with volume, pages, month—day of month if weekly—and year as follows:

4. Doe, J. E.: What I know about it. *J. Kans. M. S.*  
54:717-719, December 1954.

Include only those references specifically referred to in the text.

**Reprints:** An order slip for reprints with a table covering cost will be sent with the galley proof to each contributor.

**Illustrations:** A reasonable number of illustrations are allowed without cost to the author. Place the name of the author on the back of each illustration, table, etc. Submit clear and distinct, glossy photographs. Make drawings in black ink on white paper. Attach a slip of paper to the bottom of the illustration with the author's name, identification of article, and appropriate legend. Identify the top of the illustration. Photographs and drawings will be returned if so requested.

Under ordinary circumstances articles are scheduled several months in advance. Notice will be given the contributor when the article has been accepted and again before publication.

Society members throughout the state are encouraged to write up their interesting cases and submit them for publication. The editorial staff welcomes the opportunity of helping you prepare your article for the printer.

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## *The President's Message*

There has been much in the headlines recently about the costs of medical care, health care and the many give-away federal programs which are currently in vogue. I would like to point out a few of the concepts which don't receive headlines. If there is a way in which we can put the headlines in proper perspective, it will be helpful to those in the legislature who will be making headlines during the next three months in Kansas and during this session of Congress nationally.

I need not point out to physicians that our responsibility primarily is to practice medicine. The secondary responsibility is to work with all groups interested in improving health care.

It seems to many of us that the responsibility of the elected or appointed public servants (national and state) is just as great in their own actions. We feel there should be a predominance of statesmanship and less of the politician. This month all of our elected officials will convene for the purpose of passing legislation to benefit our country and its inhabitants.

We all agree there need to be some changes in the availability of health care. We also agree there is a deficit of the number of doctors, nurses and other trained personnel. We agree that the cost of medical care is escalating just as the cost of all other phases of health care, the cost of living index, the costs of all building trades due to the effects of labor strikes, the costs of other professional services and finally the increasing costs of the federal give-away programs.

We do not agree that the medical profession is responsible for the general economic unrest and for the spiraling costs of all services, whether related to health care or not.

We urgently request all legislative bodies to be particularly prudent and perceptive in considering their responsibilities during this session. The Kansas legislature will decide the budget, the health and welfare programs and many other problems. We hope they will be practical in their considerations and not decide programs without adequate funding—for example that they not keep the cost of training health care workers as a burden on the ill person, but include this training under educational facilities of the state; that they don't dictate a welfare program on the basis of political activity without regard to the cost or practicality of the program, expecting the providers of services to fund



the program by means of reduced fees to the professional providers or reduced charges for hospital and nursing home care. We hope the legislators will be far-thinking in response to demands for training and certifying educational achievements of various categories of health support personnel. We ask that all our legislators accept and respond to their responsibility in formulating policy for our state. Many sources of consultation are available to enable our legislators to make knowledgeable, factually sound policy.

The Kansas Medical Society will continue to react to our portion of the overall responsibility by making every effort to provide effective medically oriented peer review and utilization. We will be happy to meet with committees when asked, concerning any problem for which we may provide background factual information.

We are not politically minded—but we are patient-minded. We ask that this legislature be just as people-minded and not politically minded.

The obvious result in the health care field will be that the citizens of Kansas will receive full value for the health care money spent.

FRANCIS T. COLLINS, M.D., *President*





## *The More It Changes—*

Man is a seasonal animal and regulated by certain physiologic rhythms not always apparent but still operative in his social adaptations. This makes for a resistance to change until pressures can no longer be denied. Even then, it is easier for him to promote changes in others than in himself.

Which brings us to observe that another year has been designated. With the usual ceremony, the previous one has been assigned to history with the usual regret that it didn't live up to expectations. We can take comfort in the knowledge that we have numerous unfulfilled hopes in virtually mint condition to be used in the coming year.

The medical scene will continue to produce more rhetoric and maneuvering than accomplishments since the tumult has not yet reached its peak, but three areas are well defined and hopefully will be closer to resolution a year from now: medical education, medical delivery and medical payment. The first is covered in some prospective aspects in this issue of the JOURNAL with the publication of the papers delivered at the annual meeting of the Kansas Medical Society last May. Although their appearance now was dictated by editorial necessity, it is appropriate that the first issue of the year concentrate on this aspect of the changing picture.

The eventual form of medical education is not clearly apparent yet because it and the other items of medical concern, delivery and payment, are interdependent. Changes in one will affect the others, and the ultimate structure will reflect this. A change in education is already functioning in Kansas in the form of the shortened medical school curriculum. Traditionalists may look askance at the idea of shortening the exposure of students to academic medi-

cine but will do well to recall that during their own school days, they complained bitterly (though out of hearing of the Geheimrat) of repetition, busy work, scut work and other interferences with their business of freeing the world from disease. (Passing thought: Will the pervasive sexual awareness of the day result in the elimination of the perennial sophomore physical diagnostician who conducts his first auscultation of the female chest with his stethoscope hanging on his neck rather than in his ears?)

As we look back a long generation or more, the difference between the memory and the prospect seems to be one of a loss of compartmentalization, the fadeout of an accepted pattern which was thought to provide the orderly acquisition of knowledge but which, according to today's young, was only obstructive and repressive. One followed a routine prescribed by the catalog: three—preferably four—years of college which, beside providing a degree of maturity necessary for the rigors of medical school, supplied a supposedly desirable cultural foundation, since there would be no time for this later. The medical curriculum followed a well established pattern of progressive preparation through basic and clinical training to the then-climactic internship. For those inclined and financially able, the residency could be pursued into the rarefied atmosphere of specialization. It was all arduous, demanding and comfortable.

Today we see, beside the shortening of the course, the increase in use of electives, the greater stress on psychologic and sociologic aspects of disease, the integration of overlapping areas of medical study. The compartments now have swinging doors. Opponents fear a wholesale elimination of the good along with

the bad, and those conditioned to the earlier methods cannot wholeheartedly embrace the total change without feeling some diminution of themselves as products of an obsolescent system. But the present is a product of the past, and the future will continue the process.

Several paradoxes seem to appear in the picture. In a time of burgeoning medical information, the student's academic time is shortened. With the limitations of time and intellect forcing subspecialization, there is a resurgence of interest in family (what happened to "general"?) practice. At a time when there is complaint of poor and inadequate training, the physician is to be sent forth with what seems to be less than he was getting before (perhaps on the theory that if it isn't good, the patient will be safer if he doesn't have as much of it). In the face of complaints by patients of their inability to get the physician's attention, the circle of assistants and consequent sequestration of the physician increase. As a mechanism of getting more and better care to more patients, medical care by committee is offered. The effort to provide a more personal approach to the patient carries the threat of depersonalization to the physician.

Of course, the success of this program, for which we have sincere hopes, depends upon the elimination of these implied doubts by the development of more efficient, productive and—all right—relevant training. It also implies that what the patient wants is attention, and if this plan provides it, even if it is not from a physician, perhaps that success will be a reality.

The student of 30 to 50 years ago was the product of a compromise among the facilities, the information, the finances and the social structure of the day. So is the student today. The former is becoming an anachronism just as the latter, in another generation or two, will be. And with the wisdom born of knowing we shall not be around to find out, we predict the patient of the future will react with the same feeling as now and in the past: love the physician but damn the system.—D.E.G.

### CORRECTION

The Department of Postgraduate Medical Education at the University of Kansas Medical Center wrote the JOURNAL calling attention to two errors appearing in the December, 1970, issue in the editorial entitled "Continuing Education of the Physician."

The editorial states there are four circuit courses offered in Kansas each year. Actually six courses are offered annually.

The editorial quoted from the annual report of the department the percentage of Kansas physicians enrolled in K.U. postgraduate courses. The percentages are correct as they appear in the annual report. The figure, however, applies to all forms of graduate education offered by the university and not only to the circuit courses.

The JOURNAL is pleased to make these corrections, but contends that in neither instance is the thesis of the editorial comment altered. Kansas physicians are continually involved in graduate education throughout their professional career, as the editorial said.

A personal comment from Robert L. Neth, executive director of the department, supports this in the following way.

"I do believe that Kansas physicians are more deeply involved in their own continuing education than those of any other state in the United States. In the meetings that I attend, both regionally and nationally, concerning continuing medical education, Kansas physicians and Kansas are held in high esteem. I am proud to be associated with the medical profession in Kansas."

## NEW MEMBERS

*The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.*

Bruce Barrick, M.D.  
74th & Grandview Road  
Shawnee Mission, Kansas  
66204

M. S. Gomez, M.D.  
K. U. Medical Center  
Kansas City, Kansas 66103

George Douglas, M.D.  
Box 209  
Lakin, Kansas 67860

Ernest H. Neighbor, M. D.  
5800 Reinhardt Drive  
Shawnee Mission, Kansas  
66205

Homer J. Williams, M.D.  
524 Market  
Osage City, Kansas 66523

Buy  
U.S. Savings  
Bonds



# Medical-Legal Page

(This new, monthly feature of the JOURNAL is a project of the Legal Committee of the Kansas Medical Society.)

## Physician Liable for Death from Tetanus Following Finger Laceration

A physician was held liable in a suit brought by a widow who claimed that when the physician treated her husband for a lacerated finger, he failed to administer promptly the proper amount of tetanus toxoid. She alleged that, as a result, her husband died from tetanus. A California jury returned a verdict against the physician in the amount of \$115,873.

On May 19, the patient had cut his finger while operating a power mower. The physician treated him on the same day. One week after the man had sustained the injury, he consulted a second physician, who treated him for a cold. On May 27, the second physician hospitalized him for tetanus. The patient died on June 5 due to lung collapse allegedly caused by the tetanus.

The patient's widow and his daughter sued the first physician, charging that he negligently failed (1) to administer tetanus toxoid on May 19, (2) to obtain a complete medical history from the patient, and (3) to ascertain correctly the patient's immunization status prior to administering any prophylactic treatment for tetanus.

Evidence indicated that the patient had told the second physician that he had not received a tetanus shot on May 19. An internist testified that if a shot had been given the patient's tetanus symptoms would not have appeared eight days after the injury but would have been delayed for 14 to 20 days. He also testified that, in his opinion, the physician did not take an adequate history. However, he refused to say that the physician had failed to meet the required standard of care.

The physician contended that he took an adequate history from the patient. He alleged that the patient said he had received a tetanus booster a short time ago from another physician. According to the court, the physician assumed that the patient knew what a tetanus toxoid booster was and he assumed that the shot had been given within the last five years.

The physician claimed that he administered 0.5 cc. of tetanus toxoid to the patient. His records substantiated that position, the court said. His nurse testified that she recalled filling the syringe with that amount of serum.

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A surgeon, who was called as a witness on behalf of the physician, said that the physician had used due care in treating the patient. However, on cross-examination, he stated that the physician had been negligent in the way he took the patient's history and in assuming that the patient knew what a booster shot was.—*Lund v. Seolas* (Cal.Super.Ct., Nevada Co., Docket No. 15708, 1970)

## Legal Risks in Selling or Prescribing "The Pill"

Liability for alleged side-effects of oral contraceptives is the subject of a law review article. Liability of both the manufacturer of the contraceptives and of the prescribing physician is discussed.

More than 300 suits had been filed against manufacturers by January, 1970. The earliest suits were against the manufacturer of Enovid, the first oral contraceptive to come on the market.

In the first suit, tried in May, 1965, the user claimed that she had contracted thrombophlebitis as a result of taking Enovid. Two other cases were tried in 1969, one involving a pulmonary embolism, and the second, thromboembolism. All three suits ended in jury verdicts in favor of the manufacturer. There were also some settlements, but these were generally for small amounts, the author states.

The suits were brought on the grounds of negligence, breach of warranty, and strict liability. Under the negligence theory, if a new drug is subsequently found to produce harmful side-effects, the manufacturer may be held liable for failure to exercise due care in the development of the drug, failure to test adequately, or failure to give warning of side-effects. Inasmuch as "The Pill" is dispensed by prescription, the warning should be to the physician. Any watering down of a warning has been held tantamount to inadequate warning. The warning should be given even if only a small idiosyncratic group of users is involved. The manufacturer also has the duty of keeping reasonably abreast of scientific discoveries and of reports of hazardous side-effects published in medical journals.

The second theory for recovery, that of breach of warranty, is that if the drug causes a side-effect, such as thrombophlebitis, there is a breach of implied warranties that the drug is merchantable and is fit for its particular purpose. Although the representations of fitness and merchantability are made to the physician, he is considered to be the patient's agent for the special purpose of receiving the manufacturer's statements.

The last ground, that of strict liability in tort, is said to arise from the mere presence of the product on the market. To prevail, the patient must prove that the manufacturer sold an unreasonably dangerous product and that its use was the proximate cause of the injuries.

Many more suits based on oral contraceptives are imminent, and attorneys representing patients have stated that they will probably be joint actions against both the manufacturer and the physician. The latter would be liable if he failed to inform the patient of the hazards.

Because of the increased risk of malpractice liability, one insurance company, covering approximately 18,000 physicians, suggested that physicians obtain signed statements from patients when prescribing contraceptive pills. The suggested statement contains an acknowledgement that the patient is aware that use of the pill involves serious risks.

The author observes that the immunity from liability enjoyed by manufacturers of oral contraceptives for the past five years is ending. In April, 1970, a Brooklyn, New York, jury returned a \$250,000 verdict against the manufacturer of Enovid. The patient had developed a mesenteric thrombosis after taking the drug for eight months and had to undergo an operation to remove portions of her intestines.

Later in the same month, a federal jury in Detroit brought in a \$225,000 verdict against the same man-

ufacturer and also awarded \$50,000 to the patient's husband for loss of consortium. The patient had suffered clotting in the deep veins of her right leg following the use of Enovid. She was hospitalized eight times and underwent surgery twice—once to sever a nerve in an attempt to end severe pain in her groin and right leg, and a second time to replace her destroyed long thigh bone with artificial tissue. The patient's physician testified that he had relied on incomplete data sent to him by the manufacturer. It was shown that the manufacturer had in its files reports of some 350 other clotting cases.

In conclusion, the writer notes that the pill has now been associated with maladies that run the gamut from thrombotic disorders, strokes, cancer, and jaundice to weight gain, irritability, nausea, and depression.

The writer further asserts that the manufacturers are profiting handsomely from sales of oral contraceptives. The burden of damages for side-effects should fall on the manufacturer as a cost of production, the author avers, and this should prompt more ambitious testing and research, which may ultimately result in a convenient, effective, and safe oral contraceptive.—“Product Liability and the Pill,” by Joyce Barrett, *Cleveland State Law Review*, Vol. 19, No. 3, p. 468 (Sept., 1970), Cleveland State University, Cleveland-Marshall College of Law, 1240 Ontario St., Cleveland, Ohio 44113.

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## KMS Education—Information

### *Activity Report November 15-December 15*

The clipping service continues to indicate good usage of news releases by both weekly and daily papers.

One release forwarded this month was featured on the front page of the *Wichita Eagle*, among other papers, and provided the subject for an editorial in the *Topeka Journal*.

It is perhaps the most important release processed in 1970. It was a rebuttal of attacks Ralph Nader made on the continuing education of physicians. The noted consumer advocate referred to an alleged Kansas study which showed that 48 per cent of the state's doctors took no education in the ten-year period studies, even though the state provided “circuit rider” courses.

This charge was strictly out of left field and a 900-word release, coupled with cooperation from the

state's editors helped put it in its appropriate perspective.

Other releases processed during the 30-day period included six personalized stories dealing with the various district council meetings and a 700-word feature story pointing up the growing malpractice crisis in the state. Since this release was distributed toward the end of this report period, the usage factor is uncertain. It was also forwarded to the 165 members of the Kansas Legislature as a means of conditioning them to the very serious problem malpractice presents—not only for the medical profession, but for at least 14 other professional groups in the state ranging from architects to certified public accountants.

Currently, we are completing work on another flight of 50 “fillers” which will be forwarded to the state's daily and weekly papers in early January.



# Vox Dōx

*(The deadline for letters to the Editor is the 20th of the month preceding anticipated publication.)*

Dear Editor:

The fact that there is no rush to the "Vox Dōx" columns should surprise no one. The management of dissent by repression and ridicule over the years has left any voices except the "progressive" ones atrophic.

With the mad dash towards peer review (Big "Doc" is watching YOU!), the words of Leonard Peikoff written in 1962 on the Saskatchewan situation will bear attention:

"In a free society, a man cannot force his terms on others; those who dissent are free to deal elsewhere. A patient who disapproves of a doctor's methods can seek treatment elsewhere; a doctor who considers a patient's demands irrational is not compelled to give in to them.

"But when government sets the terms, they are enforced by the police power of the State. The standards of the government become the laws of the country, and no others are legally permitted. Should any doctor object to the decrees of the officials who staff the State Health Board—should he attempt to act on his own best judgment . . . —he becomes thereby a criminal, and he is legally subject to retribution; to loss of license, fine or jail-sentence.

"That there may be medical men on the State Health Board changes nothing. There are, undoubtedly, journalists in the bureau which controls the press in Soviet Russia; this does not make the editors of *Pravda* free men."

The tragic part of these trends is that the patient—with no scientific background—will never recognize the deterioration that has already begun. Are we so sure that Americans, by using our medical political groups for policemen, can avoid the path that England has taken? History repeats, and doom looms!

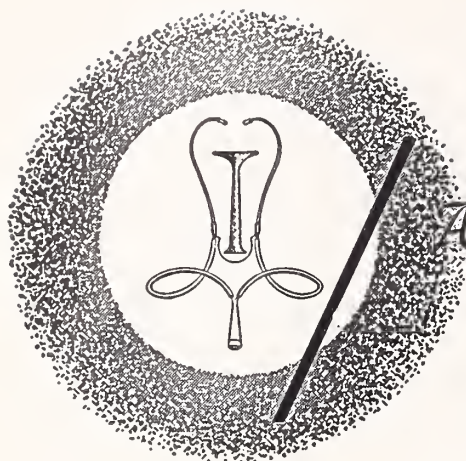
C. R. OPENSHAW, M.D.  
Hutchinson

Dear Editor:

I was most pleased to note in the November issue of the JOURNAL that the Kansas Medical Society has chartered the Kansas University Student Medical Society as full members. I believe this to be a very significant step in Kansas medicine and the beginning of a welcomed close association between the students and private practitioners of medicine in Kansas. I fully expect both groups to gain substantially due to their new relationship.

RICHARD D. WILLIAMS, M.D.  
Minneapolis, Minnesota





## Announcements

*Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. Notice of the session is posted in advance to allow the physician time to make preparations.*

### FEBRUARY

- Feb. 7-8 Industrial Audiometric Technicians Training Course, St. Mary's Hospital, Kansas City, Missouri. For reservations write: Greater Kansas City Hearing and Speech Center, Kansas City General Hospital and Medical Center, 24th & Cherry Sts., Kansas City, Missouri 64108.
- Feb. 16-19 Conference for the family practitioner of medicine, University of Iowa Health Center, Iowa City. Write: Director, Office of Medical Education, 245 Medical Research Center, University of Iowa, Iowa City 52240.
- Feb. 19 American College of Physicians, Kansas Chapter, Glenwood Manor, Overland Park, Kansas. Write: John L. Morgan, M.D., 919 W. 12th Ave., Emporia 66801.
- Feb. 21-26 Annual meeting of the American Academy of Forensic Sciences, Del Webb's Towne House, Phoenix. Write: Harlan L. Kimball, American Academy of Forensic Sciences, 750 Main St., Suite 1000, Hartford, Connecticut 06103.
- Feb. 26-Mar. 5 Annual congress and teaching seminar, International Academy of Proctology, Mexico City. Write: Alfred J. Cantor, M.D., International Academy of Proctology, 147-41 Sanford Ave., Flushing, New York 11355.

### MARCH

- Mar. 3-6 Midwest Clinical Conference, sponsored by the Chicago Medical Society, McCormick Place, Chicago. Write: George F. Lull, M.D., 310 S. Michigan Ave., Chicago 60604.

- Mar. 6-11 American Academy of Orthopedic Surgeons, Civic Center, San Francisco. Write: Charles V. Heck, M.D., 430 N. Michigan Ave., Chicago 60611.
- Mar. 26-28 American Society of Internal Medicine, Brown Palace, Denver. Write: Mr. W. R. Ramsey, Third at Market, San Francisco 94103.
- Mar. 27-Apr. 1 American College of Allergists, Fairmont and Mark Hopkins Hotels, San Francisco. Write: John R. Ausband, M.D., Bowman Gray School of Medicine, Winston-Salem, North Carolina.
- Mar. 28-Apr. 2 American College of Physicians, Hilton Hotel, Denver. Write: Edward J. Rose-now, Jr., M.D., 4200 Pine Street, Philadelphia 19104.
- Mar. 29-Apr. 3 American College of Radiology, Chase Park Plaza, St. Louis. Write: W. C. Stronach, LL.B., 20 No. Wacker Drive, Chicago 60606.

### POSTGRADUATE EDUCATION

#### University of Kansas:

- Feb. 8-9 *Cardiac Auscultation*
- Feb. 18-19 *Hearing and Speech*
- Feb. 22-24 *Surgery*
- Feb. 24 *The Mentally Handicapped Child (Great Bend)*
- Mar. 8-10 *Pediatrics*

For further information write the Department of Postgraduate Medical Education, University of Kansas School of Medicine, Rainbow Boulevard at 39th Street, Kansas City, Kansas 66103.



KANSAS STATE DEPARTMENT OF HEALTH  
TOPEKA, KANSAS

Epidemiology & Disease Control Services—Registration & Health Statistics Services—  
Kansas Morbidity Incidence  
Summary of Cases Reported in October, 1970 and 1969

<i>Diseases</i>	<i>1970</i>	<i>1969</i>	<i>October</i>	<i>January-October Inclusive</i>		
			<i>5-Year Median 1966-1970</i>	<i>1970</i>	<i>1969</i>	<i>5-Year Median 1966-1970</i>
Amebiasis .....	5	—	1	24	3	12
Aseptic meningitis .....	3	1	—	25	10	7
Brucellosis .....	—	—	—	2	1	2
Diphtheria .....	—	—	—	—	—	—
Encephalitis, prim., infect. ....	12	—	6	24	8	20
Encephalitis, post-infect. ....	1	—	—	1	2	2
Gonorrhea .....	635	504	493	5,755	4,271	3,785
Hepatitis, infectious .....	39	23	23	409	247	247
Measles (Rubeola) .....	—	—	*	69	8	*
Meningococcal meningitis .....	3	—	2	8	15	15
Mumps .....	—	—	*	143	97	*
Pertussis .....	5	—	—	8	—	8
Poliomyelitis .....	—	—	—	—	—	—
Rheumatic fever .....	—	—	—	4	7	3
Rubella (German Measles) .....	—	—	*	51	46	*
Salmonellosis .....	35	11	17	229	151	229
Scarlet fever .....	5	1	3	78	29	61
Shigellosis .....	34	7	7	112	67	67
Streptococcal infections .....	318	39	112	3,717	1,860	1,911
Syphilis .....	164	164	154	1,204	1,615	1,113
Tinea capitis .....	10	1	4	32	35	41
Tuberculosis .....	19	15	21	177	176	195
Tularemia .....	—	—	—	1	3	3
Typhoid fever .....	—	—	—	—	—	2

\* Statistics not available for 5-year median.

### IMMUNE SERUM GLOBULIN— INFECTIOUS HEPATITIS

Infectious hepatitis morbidity has increased significantly in Kansas during 1970, as indicated by the above figures. This increase has been in step with the national trend, although the Kansas case-rate figures remain below national levels. Through the second quarter of 1970, the Kansas case rate was 20.0 cases per 100,000 population, compared with a figure of 29.3 nationally. The distribution of cases throughout the state corresponds roughly to the population distribution, with the exception of Shawnee County, where the case rate has been elevated for several months despite conscientious epidemiological efforts including rigorous use of immune serum globulin (IsG) for protection of family contacts of cases. Although there have been few clinically recognized cases among persons who have received passive protection with IsG, virus shedding by persons within

this group with modified disease may be instrumental in propagation of this lingering outbreak.

Immune serum globulin continues to be available from this department for the protection of family (household) contacts of reported cases of infectious hepatitis. The current recommended dosage of IsG for this purpose is 0.01 ml. per pound of body-weight, which can be simplified as follows:

<i>Weight (lbs.)</i>	<i>IsG Dose (ml.)</i>
up to 50	0.5
50-100	1.0
over 100	2.0

Within limits, larger doses of IsG provide longer-lasting, but not necessarily more protection, against infectious hepatitis. References supporting the above dosage schedule, and results of field studies utilizing various dosages of IsG for modification of infectious hepatitis are available from the Division of Epidemiology of this department.

(Continued on page 44)



**PRACTICAL UROLOGY** by Chester C. Winter. C. V. Mosby Company, St. Louis, 1969. 249 pages illustrated. \$11.00.

Within this well-printed and illustrated volume is encompassed a well-written text which is primarily addressed to the undergraduate student or junior resident, who requires a concise, fairly inclusive accumulation of practical, current material.

Many texts are divided according to uropathy while others are divided by organs; here a combination is used, facilitating the search for specific information on a given topic.

The material is presented in the individual chapters in a clear and easily understood manner, and is organized into major categories including embryology, anatomy, etiology, infection, obstruction, calculi, masses, trauma and surgical procedures.

The abundant illustrations, which include excellent line drawings, photographs, reproductions or roentgenograms, renograms and photoscans, are well chosen, appropriate and very adequate.

Following each chapter are questions emphasizing important points of the text. These are in turn followed by a selected reading list of current and also classic references and a list of monographs and available motion pictures.

On the negative side, the chapter on male infertility and impotence lacks depth, seeming rather scant and superficial.—R.S.

**HANDBOOK OF PSYCHIATRY** by Philip Solomon and Vernon D. Patch. Lange Medical Publications, Los Altos, California, 1969. 623 pages.

Often psychiatric authors tend to produce lengthy and complicated publications. The editors of the *Handbook of Psychiatry* cannot be charged with this reproach. They have managed to discuss many difficult topics in simple and clear terms in their effort to avoid the pitfalls, which "the big, authoritative texts contain." Psychiatric terminology and entities are simplified for the reader and the same attempt is made for treatment.

Since many different contributors make up the volume, one sees a certain unevenness in presentation, which at times is bothersome. However, the handbook is not a tome to be read from cover to cover and those who will use it may most likely look for answers to specific problems. The editors indicate that they are "aiming it primarily" at the medical practitioner, the psychiatric resident and the medical student. I agree, but with one word of caution, namely for a deeper understanding of psychopathology and its treatment the readers will have to return to the mysterious lands of the authoritative texts, hopefully finding an author who can "tell it" as clearly as some of the handbook contributors.—H.L.S.

**THE ADOLESCENT PATIENT** by William A. Daniel, Jr. C. V. Mosby Company, St. Louis, 1970. 444 pages illustrated. \$20.50.

If, in reading this book, any particular aspect could be singled out as being outstanding, it would be the overall theme of how to communicate with the adolescent patient. The manner in which this author either innately knew or learned how to listen is the theme of this book.

The art of finding out what turns the adolescent on or off is the challenge of adolescent medicine. The ability to evaluate the health needs of the emotionally deprived battered child of the middle or upper class, or the physically and emotionally deprived child of an altogether different type, that is the ghetto child, is indeed the art of medicine.

In my experience of dealing with adolescent patients, this book does provide sufficient medical information to serve as a source of medical facts. It is not, however, a complete reference. Generalizations are given and specific details of treatment will need be sought elsewhere.

If one sees many adolescent patients in the practice of medicine, this book is well worth the time, energy and money expended in its reading. Again this is true because of the excellent way this author teaches us to listen to these interesting, and at times, reluctant patients, who do have many health problems, both of emotional and organic nature.—R.D.P





## Along The BOOKSHELF

### *Clendening Medical Library*

#### RECENT ACQUISITIONS

- Advisory Conference on Key Issues in Reducing Infant Mortality, Washington, D. C., 1969. Key issues in infant mortality; report. Washington, D. C. Superintendent of Documents, United States Government Printing Office, 1970.
- Arena, Jay Morris. Poisoning; toxicology, symptoms, treatments. Springfield, Illinois, Thomas, 1970.
- Brenner, Joseph H. Drugs and youth; medical, psychiatric, and legal facts. New York, Liveright, 1970.
- Cohen, Melvin R. Laparoscopy, culdoscopy, and gynecography; technique and atlas. Philadelphia, Saunders, 1970.
- Dodson, Austin Ingram. Urological surgery. St. Louis, Mosby, 1970.
- Dubin, Dale. Rapid interpretation of EKG's; a programmed course. Tampa, Florida, Cover Publishing Company, 1970.
- Field, Minna. Depth and extent of the geriatric problem; authoritative original contributions. Springfield, Illinois, Thomas, 1970.
- Freidson, Eliot. Professional dominance; the social structure of medical care. New York, Atherton Press, 1970.
- International Conference on Abortion, Hot Springs, Va., 1968. Abortion in a changing world. New York, Columbia University Press, 1970.
- Jaeger, Dorothea. The aged ill; coping with problems in geriatric care. New York, Appleton-Century-Crofts, 1970.
- Janssens, Paul A. Palaeopathology; diseases and injuries of prehistoric man. Translated into English by Ida Dequeedker.
- Jones, Boisfeuillet. The health of Americans. Englewood Cliffs, New Jersey, Prentice-Hall, 1970.
- Kaye, Sidney. Handbook of emergency toxicology; a guide for the identification, diagnosis, and treat-

- ment of poisoning. Springfield, Illinois, Thomas, 1970.
- Kogan, Benjamin A. Health; man in a changing environment. New York, Harcourt, Brace & World, 1970.
- Naegele, Kaspar D. Health and healing. San Francisco, Jossey-Bass, 1970.
- Perloff, Joseph K. The clinical recognition of congenital heart disease. Philadelphia, Saunders, 1970.
- Philipp, Elliot Elias. Scientific foundations of obstetrics and gynaecology. Philadelphia, Davis, 1970.
- Pridgen, James Edward. Penetrating wounds of the abdomen. Springfield, Illinois, Thomas, 1970.
- Rational therapy and control of tuberculosis; a symposium. Gainesville, University of Florida Press, 1970.
- Rothman, Theodore. Changing patterns in psychiatric care; an anthology of evolving scientific psychiatry in medicine. Los Angeles, Rush Research Foundations; New York, Crown Publishers, 1970.
- Smith, Harmon L. Ethics and the new medicine. Nashville, Abingdon Press, 1970.
- Squire, Lucy Frank. The chest. Philadelphia, Saunders, 1970.
- Wittig, Heinz J. A primer on immunologic disorders. Springfield, Illinois, Thomas, 1970.

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# Woman's Auxiliary

Grandma used to tell us that you can lead a horse to water but you can't make a donkey out of him, or something like that. But the Kansas Medical Auxiliary women have a bit of the donkey's stubbornness when they make up their minds to do something, and what they've made up their minds about this time is to find suitable candidates for health careers.

Recruitment for allied health occupations has been a concern of the auxiliary for a long time. It is obvious that our husbands don't have time to round up many candidates for these fields, but it is even more obvious that the need for such personnel is ever-increasing.

In the beginning the auxiliary applied itself to nurse recruitment only, establishing a scholarship loan fund and making various attempts to further interest in nursing. Several years ago this project was given a more general nature, and since this time recruitment in all the allied health career fields has been a major auxiliary effort.

The women discovered that one of the first and easiest ways to interest young people in these careers was to have a career day at the high schools. This may be approached in several ways. Sometimes the only contact the auxiliary is able to make is through counselors or teachers, with these people passing the information on to the students. A better approach has been through assemblies, health career booths, posters, or personal appointments with interested students. Nearly all the Kansas county auxiliaries have participated in some kind of health career recruitment during the last eight or ten years.

Eventually interest grew until some of the projects were expanded to a half day or a full day "panel of experts" from each health field area talking to large groups of students. Often this particular type of program was climaxed with tours through a local hospital and maybe a Coke and cookie party to wind up on. Reno County has held several of these programs in the last few years.

Another angle has been the Future Medical Careers Clubs in high schools. This year Shawnee County Auxiliary has sponsored five such clubs, all active and open to any student who wants to join. The auxiliary helps the teacher-sponsors organize the club and select programs. They also provide literature and information concerning medical careers, and about the scholarships and loans available for each area. Stu-

dents in the clubs helped with the week-long 1970 Health Fair in Topeka, building and manning a booth for dissemination of literature on health careers.

Sedgwick County Auxiliary expended a year-long effort during 1970, promoting and participating in Wichita's Medi-Century Health Expo '70. It is estimated that 43,000 people attended the four-day exposition in May. In addition to helping with the planning and promotion, the Wichita women manned a booth on health careers, using a computer to identify the 127 careers available, and the opportunities, education and qualifications for each. Approximately 500 students took a computerized test which rated them in aptitude in eight career choices.

These are only a part of the state-wide effort being made by auxiliary women. Health careers chairman, Mrs. Warren Meyer, Wichita, has some other suggestions. In addition to the ones mentioned, she suggests sponsoring a mobile health unit, workshops on careers, pilot programs on new areas, as well as bumper stickers, a possible WATS line for interested callers, poster contests, and recruitment for vocational training for people not qualified to train for degreed positions.

As we said, when the auxiliary women make up their minds to help, things start moving. You weary physicians will have help yet if we have our way. Grandma used to say "Where there's a will, there's a lawsuit." (I guess that's what she said.) We're in there working, anyhow.

Have a Happy New Year, y'all.

Yours,  
Annie

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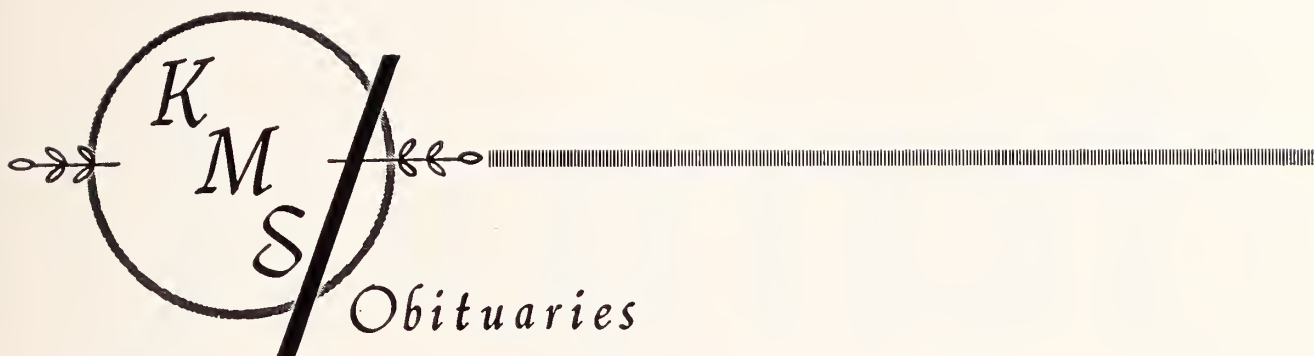
## Morbidity Incidence Report

*(Continued from page 41)*

Again, it is emphasized that the use of serum immune globulin from the State Department of Health is restricted to the following:

1. To protect family members who actually reside in the same household as a case of infectious hepatitis. All other individuals who desire such protection must obtain and pay for this biological through regular medical channels.
2. To protect women in the first trimester of pregnancy who have been exposed to rubella.





#### VERNON B. DOWLER, M.D.

Dr. Vernon B. Dowler, 75, died at his home in Dodge City on October 3, 1970.

Dr. Dowler was born May 11, 1895, at Tillsonburg, Ontario, Canada. He studied medicine at the University of Toronto and McGill University of Montreal, and received his medical degree in 1919. He practiced medicine in Canada until 1926 when he came to the United States to become a Fellow in Pediatrics of the Mayo Clinic. He later practiced medicine in Minot, North Dakota, coming to Dodge City in 1931.

Survivors include his wife and daughter.

---

#### WILLIAM STEINHAUSER, M.D.

Dr. William Steinhauser, Hiawatha, died at a hospital in Shawnee Mission, Kansas. He was 99 years old.

Born at Clyde, Ohio, on June 29, 1872, Dr. Steinhauser received medical degree from Ohio Electric Medical College in 1905. He practiced medicine in Brown County, and later in Hamlin and Hiawatha from 1906 until his retirement in 1946.

Dr. Steinhauser is survived by a son and three daughters.

---

#### FRANK A. TRUMP, M.D.

Dr. Frank A. Trump, 80, died October 21, 1970, at the Ransom Memorial Hospital, Ottawa. He had practiced medicine in Ottawa for 51 years.

Dr. Trump was born July 24, 1890, at Formosa, Kansas. He was a 1915 graduate of the University of Kansas School of Medicine and came to Ottawa after completing his internship at a Kansas City hospital. Through the years he completed postgraduate work in internal medicine and cardiology in Europe. He retired from practice in 1967.

Survivors include his wife and son.

Memorial contributions may be made to Ottawa University and Ransom Memorial Hospital.

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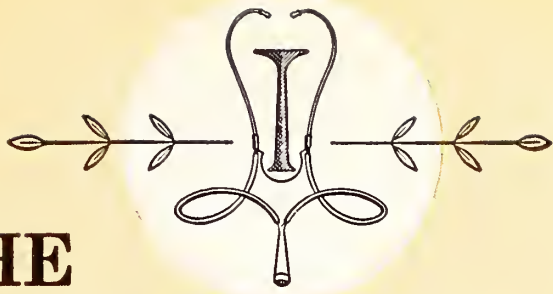
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FEBRUARY  
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Menrium® treats  
the menopausal  
symptoms  
that bother him  
most.





His wife has a lot of different menopausal symptoms, but only a few really irritate him. Her hot flashes, her vertigo, her palpitations—that's her problem. What really bothers him is her nervousness, her irritability and her excessive anxiety, often expressed by endless "book-shuffling, chain-smoking, reading-lamp" insomnia!

Menrium takes care of hot flashes, vertigo, palpitations in most menopausal women. Menrium provides the well-known antianxiety action of chlordiazepoxide (Librium®) and water-soluble esterified estrogens. It therefore relieves more symptoms than either component separately. It takes care of the vasomotor symptoms as well as the emotional symptoms. This means the symptoms that bother his wife most. And the symptoms that irritate him most.

So, to help them both get through her menopause, remember Menrium.



Before prescribing, please consult complete product information, a summary of which follows:

**Indications:** Management of manifestations generally associated with the menopausal syndrome—anxiety and tension, vasomotor complaints and hormonal deficiency states.

**Contraindications:** Women with cancer of breast or genitalia, except inoperable cases, and those with known hypersensitivity to chlordiazepoxide and/or esterified estrogens.

**Warnings:** Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Exclude other possible causes of menopausal syndrome manifestations, such as pregnancy. Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions) similar to those seen with barbiturates have been reported following discontinuance of chlordiazepoxide HCl. Potential benefits of use in pregnancy, lactation or women of childbearing age should be weighed against possible hazards to mother and child. Clinical data inadequate on safety in pregnancy.

**Precautions:** In elderly and debilitated patients, limit dosage to smallest effective amount of chlordiazepoxide (initially 10 mg or less per day) to preclude ataxia or oversedation; increase gradually as needed and tolerated. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects—particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in patients with impaired renal or hepatic function. Paradoxical reactions to chlordiazepoxide (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients. Employ usual precautions in the treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation very rarely reported in patients receiving Librium® (chlordiazepoxide) and oral anticoagulants.

**Adverse Reactions:** Untoward effects seen with either compound alone may occur with Menrium. With chlordiazepoxide, drowsiness, ataxia and confusion reported in some patients, particularly in the elderly and debilitated; while usually avoided by proper dosage adjustment, these are occasionally observed at lower dosage ranges. Also reported have been a few instances of syncope; isolated occurrences of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido, and occasional reports of blood dyscrasias, including agranulocytosis, jaundice and hepatic dysfunction. Periodic blood counts and liver function tests advisable during protracted treatment. Changes in EEG patterns (low-voltage fast activity) observed during and after chlordiazepoxide treatment.

With estrogens, headache, nausea and vomiting, anorexia, gastrointestinal discomfort, dysuria and urinary frequency, jitteriness, breast engorgement, formation of breast cysts, skin rashes and pruritus occasionally seen. Administration may also be associated with uterine bleeding and/or followed by withdrawal bleeding.

**Usual Dosage:** One tablet t.i.d. for 21 days, followed by one-week rest periods.

# Menrium® T.I.D.

5 mg chlordiazepoxide

5-2

0.2 mg water-soluble esterified estrogens

5 mg chlordiazepoxide

5-4

0.4 mg water-soluble esterified estrogens

10 mg chlordiazepoxide

10-4

0.4 mg water-soluble esterified estrogens

# The JOURNAL of the KANSAS MEDICAL SOCIETY

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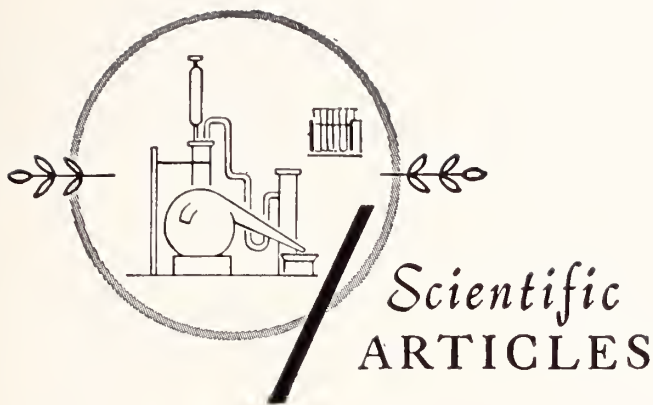
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# Acute Pericarditis—

## —An Outbreak Due to Cocksackie Viruses B

E. DAVID KIRK, M.D.,; JESSE H. MARYMONT, JR., M.D.;  
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IT IS OUR PURPOSE to describe an outbreak of pericarditis due to the Cocksackie viruses B with evidence that types 3, 4 and 5 were the etiologic agents. Since isolation of a Cocksackie virus from the stools of two paralyzed children who lived in Cocksackie, New York, in 1947,<sup>1</sup> illnesses attributed to these viruses have been described.<sup>2-4</sup> There are numerous case reports of acute pericarditis due to Cocksackie viruses A and B.<sup>3-10</sup> Six epidemics of Cocksackie virus pericarditis have been reported (*Table 1*),<sup>2, 11-15</sup> and only type B5 has been the etiologic agent.

### Materials and Methods

During August and September, 1967, eight patients with illnesses due to the Cocksackie viruses B were studied, and all had findings consistent with pericarditis.

Throat swabs and stool specimens were used for virus isolation. These were prepared by standard

methods<sup>16</sup> and inoculated into primary rhesus monkey kidney maintained on medium 199 with 2 per cent fetal bovine serum. Tubes were examined daily for one week and discarded if no cytopathogenic effect developed. An attempt was made to obtain two throat swabs and two stools from each patient; but if one of these yielded a virus, additional specimens were not processed. All specimens were inoculated into tissue culture within three hours after collection; none were frozen and stored.

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**During August and September, 1967, eight cases of acute pericarditis of Cocksackie virus B etiology were seen. Neutralizing antibody tests would indicate that types B3, B4 and B5 were the etiologic agents. Four of the eight patients had serologic evidence consistent with infection by more than one type.**

**Previously reported Cocksackie virus pericarditis outbreaks have all been due to type B5.**

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Isolated viruses were identified by standard techniques using 100TCD50 of the unknown virus and 100 units of antiserum. Primary rhesus monkey kidney was used for identification.

TABLE 1  
REPORTED OUTBREAKS OF COXSACKIE VIRUS B PERICARDITIS

Investigation and Year	Virus	No. of Patients	Male	Female	Method of Diagnosis		
					CULTURE	SEROLOGY	BOTH
Gordon, 1956	B5	7	7	0	0	6	1
Null, 1957	B5	3	?	?	0	1	2
Bain, 1958	B5	7	3	4	0	2	5
Gillett, 1958	B5	8	?	?	0	2	2*
Plager, 1961	B5	5	1	4	5	not attempted	0
Hedlund, 1961	B5	6	4	2	0	4	2
Kirk, 1967	B5, B4, B3	8	5	3	0	4	3

\* Information for diagnosis was inadequate in four cases.

Acute phase sera were obtained from six of these patients within three days after the onset of their illnesses. From two other patients the initial sera were obtained on the fourteenth and fifteenth days, respectively. Convalescent sera were collected on all patients four weeks later.

Neutralization tests were done in the Wish<sup>17</sup> line of continuous amnion using adapted prototype Coxsackie virus B. 100TCD<sub>50</sub> of virus was mixed with equal volumes of appropriate serum dilutions, incubated at 37 C for one hour and inoculated into tissue culture. Results were read when control tubes had 3+ to 4+ cytopathic effect.

## Results

In the eight patients studied, one had a fourfold rise in neutralizing antibody titer against Coxsackie virus B5 (Table 2); two patients had greater than a fourfold rise against B3 as well as a rising B5 titer; two patients from whom the first serum was obtained two weeks after onset of symptoms had very high titers against B4 and B5 in both convalescent sera (one of these patients also had a high titer against B1); one patient had a fourfold rise against B4; another patient had a high titer against B4 in both convalescent sera; and one patient had no titer against any of the Coxsackie viruses B.

## Patient Summaries

**PATIENT 1:** A 60-year-old male was admitted to the Wesley Medical Center (WMC) on August 3 with chest pain of seven hours' duration. The pain was located in the lower sternal area and was aggravated by coughing or deep breathing. His oral temperature was 101 F; blood pressure, 130/90 millimeters mercury; pulse rate, 84 beats per minute and regular; and respiratory rate, 12 respirations per minute. The heart sounds were normal.

A white blood cell (WBC) count was 8,100 per cubic millimeter with 75 per cent neutrophils, 15 per cent lymphocytes, 9 per cent monocytes and 1 per cent eosinophils. The hemoglobin was 13.1 grams per 100 milliliter. The erythrocyte sedimentation rate (ESR) was 33 millimeters in one hour (Wintrobe method). The serum glutamic oxaloacetic transaminase (SGOT) was 17 units (normal value, 10-50 units). The first four daily electrocardiograms showed elevation of the ST segments in the inferior limb leads. The electrocardiogram on the fifth day showed return of the ST segment to the base line. The chest x-ray was normal.

There was no chest pain after the second hospital day. He was dismissed from the hospital free of symptoms. There was a greater than fourfold rise in neutralizing antibodies against Coxsackie viruses B3 and B5. Coxsackie virus B5 was cultured from the stool specimen.

**PATIENT 2:** A 44-year-old male was admitted to Wesley Medical Center on August 5 with pain in the substernal area which was aggravated by body movement as well as by lying in the supine position. The pain was improved when the patient was sitting. The blood pressure was 120/70 millimeters mercury; pulse rate, 82 beats per minute and regular; respiratory rate, 18 respirations per minute; oral temperature, 97 F. The physical examination was considered entirely normal. On the third hospital day, a pericardial systolic friction rub was heard over the precordium. The WBC was 10,700 per cubic millimeter with 76 per cent neutrophils, 12 per cent lymphocytes and 12 per cent monocytes. The hemoglobin was 15.9 grams per 100 milliliter. The SGOT was 26 units; serum glutamic pyruvic transaminase (SGPT), 27 units (normal value, 1-45 units); and lactic dehydrogenase (LDH), 180 units (normal value, 100-300 units). The chest x-ray was normal. There was



TABLE 2  
NEUTRALIZING ANTIBODY TITERS AGAINST THE COXSACKIE VIRUSES

Patient	B1		B3		B4		B5	
	1*	2†	1	2	1	2	1	2
1 .....	‡		<1:10	1:320			<1:10	1:40
2 .....								
3** .....	≥1:640	≥1:640			≥1:640	≥1:640	≥1:640	≥1:640
4 .....							<1:10	1:40
5 .....			1:10	1:640			<1:10	1:20
6 .....					1:40	1:160		
7 .....					1:160	1:160		
8** .....					1:160	1:160	1:320	1:320

\* Acute phase serum.

† Convalescent phase serum.

‡ Titers in these cases were not significant (1:10 or less).

\*\* The first sera on patients 3 and 8 were taken two weeks after onset of illness.

a one millimeter ST segment elevation in leads II, III and AVF on the first electrocardiogram. On the second hospital day, there was a 2 millimeter elevation of the ST segments in all leads except AVR, V<sub>3</sub>R and V<sub>1</sub>. The ST segments remained elevated until August 11. He was then dismissed from the hospital free of symptoms.

This patient had no significant titer against any of the Coxsackie viruses B, and no virus could be isolated. He was included in this series because his course was typical of the known Coxsackie virus B pericarditis patients, he was ill during the epidemic, and there were no other causes for pericarditis identified.

**PATIENT 3:** A 27-year-old male was admitted to the hospital on August 8. He became ill 13 days prior to admission with myalgia, chills and fever up to 104 F; then six days prior to admission substernal pain began which was aggravated by deep breathing and coughing. He became jaundiced just prior to admission. The blood pressure was 110/60 millimeters mercury with a paradoxical blood pressure of 24 millimeters mercury. The pulse rate was 104 beats per minute and regular. His neck veins were distended to the ear lobes with his body inclined at 45°. There was a pericardial friction rub at the lower left sternal border. The right upper quadrant of the abdomen was tender. The liver was not palpable.

The white blood count was 11,200 per cubic millimeter with 83 per cent neutrophils, 9 per cent lymphocytes, 4 per cent eosinophils and 4 per cent monocytes. Hemoglobin was 12.9 grams per 100 millimeter. The ESR was 52 millimeters in one hour. The total bilirubin was 1.8 milligrams per 100 milliliter (normal value, 0.2-1 milligrams per 100 milliliter); SGOT, 52 units; SGPT, 300 units; alka-

line phosphatase, 3.1 King-Armstrong units; and the bromsulphalein retention, 35 per cent at 45 minutes. The transverse diameter of the heart on chest x-ray was estimated to be 15 per cent above the upper limits of normal size. Six days later the cardiac size was normal. On the electrocardiogram there were diffuse T-wave inversions which remained unchanged throughout the hospitalization.

His chest pains subsided after two days, and the temperature returned to normal on the third hospital day. On August 14, the bilirubin was 0.4 milligrams per 100 millimeter; SGOT, 52 units; and SGPT, 200 units. No virus was isolated. Both convalescent sera showed neutralizing antibody titers of 1:640 to Coxsackie viruses B1, B4 and B5.

One month later he was free of symptoms and the electrocardiogram was normal.

**PATIENT 4:** A 6-year-old male was admitted to Wesley Medical Center on August 10 with left upper quadrant abdominal pain and fever (101-103 F) of two days' duration. He had no chest pain, nausea, vomiting or diarrhea. The pulse rate was 140 beats per minute with many premature contractions. The respiratory rate was 28 respirations per minute. There was a grade 2/6 systolic ejection murmur heard over the precordium. There was no friction rub. The rest of the examination was normal.

The white blood count was 6,400 per cubic millimeter with 71 per cent neutrophils, 21 per cent lymphocytes and 8 per cent monocytes. The hemoglobin was 12.5 grams per 100 milliliter; SGOT, 21 units; and ESR, 42 millimeters in one hour. His chest x-ray was normal. The electrocardiogram revealed a sinus rate of 130 per minute and unifocal ventricular premature contractions at the rate of 35 per minute. An echopericardiogram was consistent with pericardial effusion.

He was digitalized. The fever and abdominal pain subsided by the second hospital day. Antiarrhythmic drugs were not used. During hospitalization the ventricular premature contractions subsided. Subsequently, he was dismissed free of symptoms and had no recurrence of symptoms. There was a fourfold rise in neutralizing antibody titer against Cocksackie virus B5. Cocksackie virus B5 was also isolated from the stool specimen.

The location of the pain was atypical for pericarditis, and there were no electrocardiographic findings of pericarditis. Nevertheless, the clinical picture of fever, left upper quadrant abdominal pain, abnormal echopericardiogram and positive viral studies support the diagnosis of acute pericarditis.

**PATIENT 5:** A 23-year-old female was admitted on August 14 complaining of diffuse aches, chills and chest pain of three days' duration. The chest pain became severe the day of admission; it was worse while supine or leaning forward. The oral temperature was 101 F; blood pressure, 130/90 millimeters mercury; and pulse rate, 110 beats per minute and regular. A pericardial friction rub was heard. The rest of the examination was normal.

The white blood count was 5,100 per cubic millimeter with 72 per cent neutrophils, 12 per cent lymphocytes, 15 per cent monocytes and 1 per cent basophils. The hemoglobin was 13.7 grams per 100 milliliter; SGOT, 20 units; and ESR, 22 millimeters in one hour. There were diffuse T-wave inversions on the electrocardiogram which subsequently returned to normal. The chest x-ray was normal.

By the second hospital day, the chest pain was diminished. The patient recovered without recurrence. There was a greater than fourfold rise in neutralizing antibody titer to Cocksackie virus B3. No virus was isolated.

**PATIENT 6:** A 33-year-old female was admitted to Wesley Medical Center on September 23. She was well until two days prior to admission when dyspnea and substernal chest pain began. The pain was aggravated by breathing and lying down and relieved by sitting. The oral temperature was 98 F; blood pressure, 100/60 millimeters mercury; pulse rate, 90 beats per minute and regular; and respiratory rate, 16 respirations per minute. The physical examination was normal except for a pericardial friction rub at the lower left sternal border.

The white blood count was 10,000 per cubic millimeter with 69 per cent neutrophils, 25 per cent lymphocytes and 6 per cent monocytes. The hemoglobin was 10.7 grams per 100 milliliter; ESR was 43 millimeters in one hour; and SGOT was 14 units. On the electrocardiogram, there was a one millimeter elevation of the ST segments in the inferior and lateral limb leads and lateral precordial leads (*Figure 1*). Two days later there was a return of

the ST segments to the base line and flat T-waves. The final electrocardiogram showed inversion of the T-waves. The chest x-ray was normal.

The chest pain and friction rub subsided on the fourth hospital day. There was a fourfold rise in neutralizing antibody titer against Cocksackie virus B4. Cocksackie virus B5 was isolated from the stool specimen.

**PATIENT 7:** A 22-year-old male was hospitalized on September 25 with substernal chest pain of one day's duration. This stabbing pain was aggravated with swallowing, deep breathing and any type of chest motion. Four members of the family were ill with nasal congestion, cough and malaise.

The oral temperature was 100 F; blood pressure, 120/60 millimeters mercury; pulse rate, 82 beats per minute and regular; and respiratory rate, 16 respirations per minute. Physical examination was entirely normal.

The white blood count was 16,000 per cubic millimeter with 79 per cent neutrophils, 13 per cent lymphocytes, 4 per cent monocytes and 4 per cent eosinophils; hemoglobin, 17.1 grams per 100 milliliter; SGOT, 34 units; and LDH, 420 units. There was diffuse T-wave flattening on the electrocardiogram. The chest x-ray was normal.

Because of the persistent severity of the pain, he was treated with prednisone (5 milligrams orally, four times a day) and discharged free of symptoms. An electrocardiogram (October 14) still showed further T-wave lowering and inversion in the limb and lateral precordial leads. Both acute and convalescent sera showed neutralizing antibody titers of 1:160 against Cocksackie virus B4. No virus was isolated.

Although a friction rub was not heard and there was no demonstrated rise of titer, this patient was included in this series because of the acute onset of the illness, nature of the chest pain and the electrocardiograms which were consistent with the clinical diagnosis of acute pericarditis.

**PATIENT 8:** An 18-year-old female was admitted to Wesley Medical Center on September 29. She had been ill for 14 days prior to admission with malaise, fever, dyspnea and substernal pain aggravated with breathing and lying down. The oral temperature was 100 F. The blood pressure was 120/88 millimeters mercury with a paradoxical blood pressure of 33 millimeters mercury. Her neck veins were distended to the angle of the jaw with the body inclined at 45°. There were no rales heard in the chest. There was a precordial, pericardial friction rub. The liver was not enlarged and there was no peripheral edema.

The hemoglobin was 14.3 grams per 100 milliliter; white blood count, 24,500 per cubic millimeter with 87 per cent neutrophils, 7 per cent lymphocytes and 6 per cent monocytes. The SGOT was 13 units;



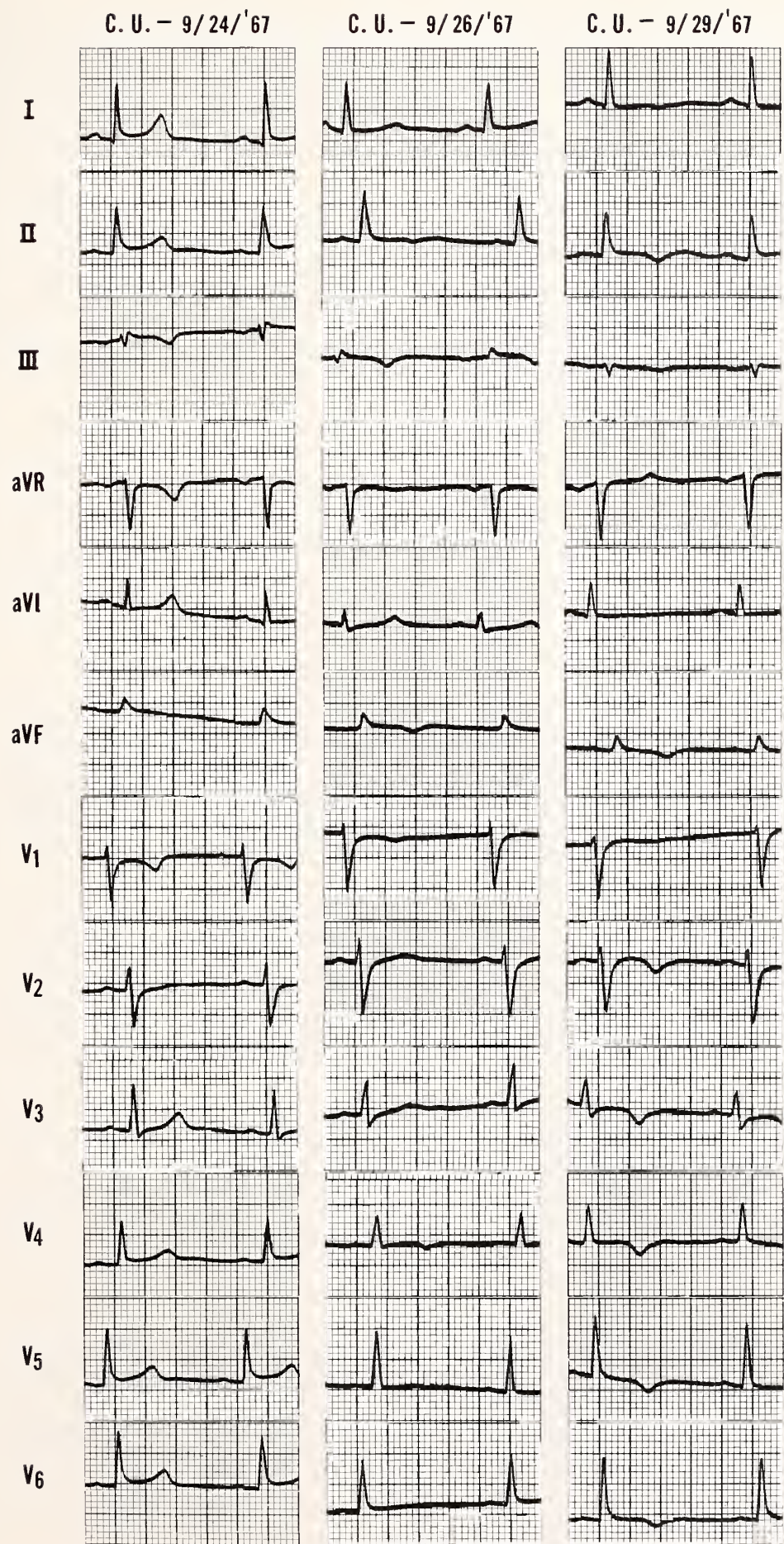


Figure 1. Serial electrocardiograms of patient 6 (C.U.).



ESR, 35 millimeters in one hour; and tuberculin (intermediate strength) and histoplasmin skin tests were negative. The chest x-ray was consistent with heart failure. The electrocardiogram showed sinus tachycardia and diffuse T-wave inversions (*Figure 2*).

Treatment consisted of rest, digitalis and salt restriction. Improvement was gradual during the next 14 days. On the twenty-first day after admission, she had a recurrence of chest pain and shortness of breath, but this was mild and transient. Subsequent recovery was complete without recurrence of pain and the signs of heart failure disappeared. The heart failure was probably due to an associated myocarditis.

Both convalescent sera showed neutralizing antibody titers of 1:160 against Coxsackie virus B4 and 1:320 against B5. No virus was isolated.

### Comment

Christian<sup>18</sup> stated that the syndrome of idiopathic pericarditis was recognized as early as 1854. Hedlune, *et al.*<sup>15</sup> reported that pericarditis was noted as a complication observed in one of the earliest reports

on the epidemic pleurodynia in 1896. It has been suspected that acute benign pericarditis may be of viral etiology since pericarditis has been observed with other diseases of proved viral etiology such as influenza.<sup>19</sup> Bing<sup>20</sup> coined the term "epidemic pericarditis" in 1933 when he described six patients admitted to the hospital with pleurodynia and pericarditis. Subsequently the etiologic association of pleurodynia with strains of Coxsackie viruses B was reported,<sup>21</sup> and the association of pleurodynia and pericarditis due to the Coxsackie viruses B was noted.<sup>22, 23</sup> Since Coxsackie viruses have been isolated from pericardial fluid in patients with clinical pericarditis, there remains little doubt of the etiologic relationship.<sup>9, 24, 25</sup>

Coxsackie viruses have been shown to be prevalent in the summertime, and the outbreaks reported have all occurred from spring to autumn. In Arterstein's and Bain's series<sup>4, 12</sup> the frequent association of viral-like illnesses in members of patients' families was noted. Bottiger, *et al.*<sup>26</sup> reported four cases of pericarditis due to type B5 in one family.

S. R. — 9/29/'67

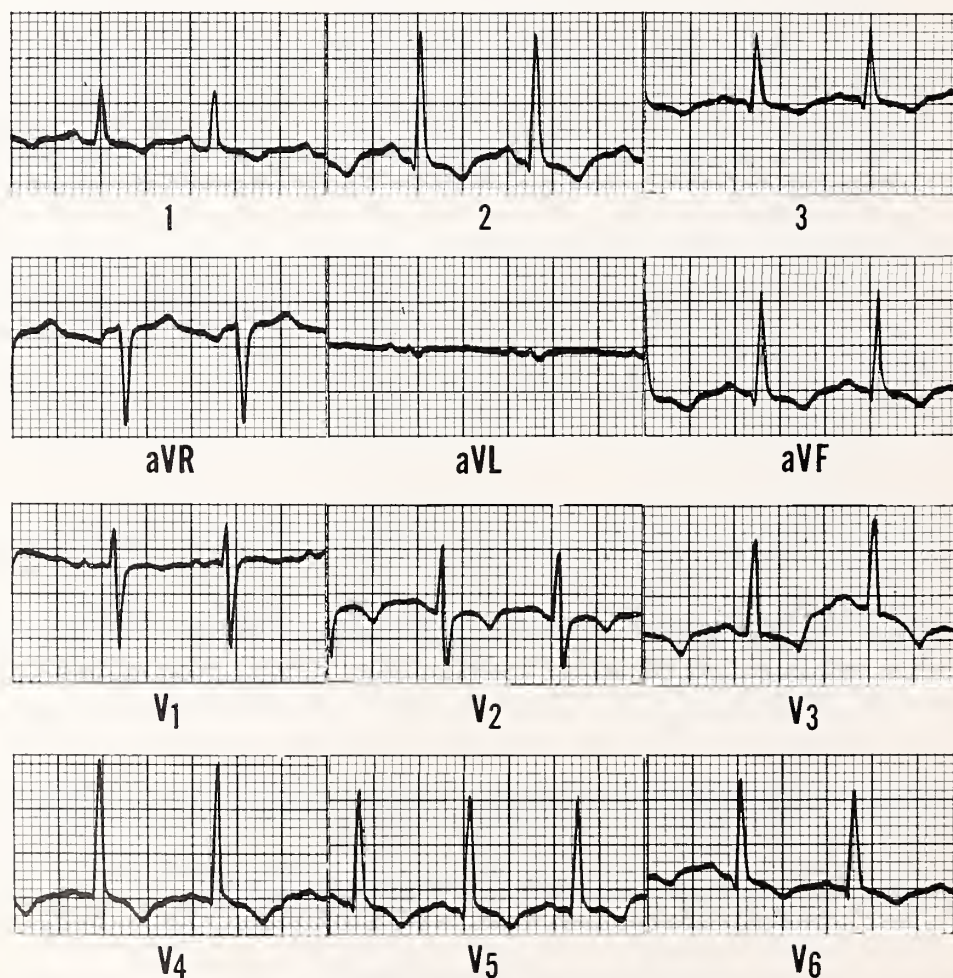


Figure 2. Electrocardiogram of patient 8 (S.R.).



There has been no common antigen among the Coxsackie viruses B. The neutralization tests suggest that Coxsackie viruses B3, B4 and B5 were responsible for the present outbreak. In one patient, there was a high titer against B1 in addition to B4 and B5; but since this is the only case, it is difficult to say that B1 was involved.

There have been other reports of mixed Coxsackie virus outbreaks. Plager<sup>14</sup> reported that in the "Upstate" New York epidemic of 104 cases, three types of Coxsackie viruses B and Coxsackie virus A were involved. Artenstein, *et al.*<sup>4</sup> studied 28 patients during an outbreak of Coxsackie viruses B infection and found types B2, B3, B4 and B5 to be the etiologic agents.

## References

1. Dalldorf, G. and Sickles, G. M.: Unidentified filterable agent from feces of children with paralysis. *Science* 108: 61-62, July 16, 1947.
2. Null, F. C. and Castle, C. H.: Adult pericarditis and myocarditis due to Coxsackie virus group B type 5. *New Eng. J. Med.* 261:937-942, November 5, 1959.
3. Smith, W. G.: Adult heart disease due to the Coxsackie virus group B. *Brit. Heart J.* 28:204-220, February, 1966.
4. Artenstein, M. S., Cadegan, F. C. and Buescher, E. L.: Epidemic Coxsackie virus infection with mixed clinical manifestations. *Ann. Intern. Med.* 60:196-203, February, 1964.
5. Movitt, E. F., Lennette, E. H., Mangum, J. F., Berk, M. and Bowman, M. S.: Acute benign pericarditis: Report of two cases with group A and group B Coxsackie viruses. *New Eng. J. Med.* 258:1082-1086, May 29, 1958.
6. Bell, J. F. and Meis, A.: Pericarditis in infection due to Coxsackie viruses group B type 3. *New Eng. J. Med.* 261:126-128, July 16, 1959.
7. Liu, Henry Y. and Garcia, R.: Acute idiopathic pericarditis: report of a fatal case with brief review of the literature. *Am. Heart J.* 69:677-683, May 1965.
8. Weinstein, S. B.: Acute benign pericarditis associated with Coxsackie virus group B type 5. *New Eng. J. Med.* 257:265-267, August 8, 1957.
9. De Sanctis, M. T., Benedetto, A. and Mont Alto, T.: Pericarditis infection due to Coxsackie virus group B type 2. *Brit. Med. J.* 5370:1451-1452, December 7, 1963.
10. Hosier, D. M. and Newton, W. A.: Serious Coxsackie infections in infants and children. *Am. J. Dis. Child.* 96:251-267, September, 1958.
11. Gillett, R. L.: Acute benign pericarditis and the Coxsackie viruses. *New Eng. J. Med.* 261:838-843, October 22, 1959.
12. Bain, H. W., McLean, D. M. and Walker, S. J.: Epidemic pleurodynia (Bornholm Disease) due to Coxsackie B-5 virus. *Pediatrics* 27:889-903, June, 1961.
13. Gordon, R. B., Lennette, E. H. and Sandro, R. S.: Varied clinical manifestations of Coxsackie virus infections: Observations and comments on outbreak in California. *Arch. Intern. Med.* 103:63-75, January, 1959.
14. Plager, H., Beebe, R. and Miller, J. K.: Coxsackie B-5 pericarditis in pregnancy. *Arch. Intern. Med.* 110:735-738, November, 1962.
15. Hedlund, P., Lycke, E. and Tibblin, G.: The association of acute benign pericarditis in adults with Coxsackie B-5 virus infection. *Acta Med. Scand.* 172:323-325, September, 1962.
16. Lennette, E. H. and Schmidt, N. J.: *Diagnostic Procedures for Viral and Rickettsial Diseases*, ed 3. New York: Public Health Association, 1964, pp. 107-108.
17. Hayflick, L.: The establishment of a line (WISH) of human amnion cells in continuous cultivation. *Exp. Cell Res.* 23:14-20, February, 1961.
18. Christian, H. A.: Nearly 10 decades of interest in idiopathic pericarditis. *Am. Heart J.* 42:645-651, November, 1951.
19. Adams, C. W.: Postviral myopericarditis associated with the influenza virus. Report of 8 cases. *Am. J. Cardiol.* 4:56-67, July, 1959.
20. Bing, H. I.: Epidemic Pericarditis. *Acta Med. Scand.* 80:29-33, 1933.
21. Findlay, G. M. and Howard, E. M.: Coxsackie viruses and Bornholm Disease. *Brit. Med. J.* 1:1233-1236, May 27, 1950.
22. Finn, J. J., Weller, T. H. and Morgan, H. R.: Epidemic pleurodynia: Clinical and etiologic studies based on 114 cases. *Arch. Intern. Med.* 83:305-321, March, 1949.
23. Fletcher, E. and Brennar, C. F.: Cardiac complications of Coxsackie virus infection. *Lancet* 1:913-915, May 4, 1957.
24. Kagan, H. and Bernkopf, H.: Pericarditis caused by Coxsackie B. *Ann. Paediat.* 189:44-50, July, 1957.
25. Brodie, H. R. and Marchessault, V.: Acute benign pericarditis by Coxsackie virus group B. *New Eng. J. Med.* 262:1278-1280, June 23, 1960.
26. Bottiger, M., Johnson, T. and Zeipel, G. V.: Family infections with acute pericarditis and myocarditis by Coxsackie Virus B5. *Arch. Geschwulstforsch* 13:153-155, 1963.

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# Treatment of Hepatic Coma

## *Treatment of Acute Hepatic Coma With Plasmaphoresis and Plasma Exchange*

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SURVIVAL RATES in acute hepatic coma of all causes vary between 4 and 37 per cent.<sup>1-3</sup> However, if we consider only those patients in Grade 4 to Grade 5 coma<sup>4</sup> due to fulminating viral hepatitis who have not responded to intensive medical therapy within 48 hours, then the likelihood of survival is extremely remote. The rationale for extraordinary forms of therapy in such a patient is analogous to that used in patients with acute renal failure. In both situations an essential organ is rendered nonfunctional through acute injury. Both the renal tubular cell and the hepatocyte are capable of regeneration, provided the patient survives long enough. A satisfactory form of therapy for acute hepatic coma unresponsive to medical management has not yet been found. Heterologous liver perfusion, cross circulation, and exchange transfusion have all been tried with variable success.<sup>5</sup> For a number of reasons these procedures present logistic and financial problems that make them impractical. However, if exchange transfusions have any beneficial effect then it seems reasonable to assume improvement is due to removal of plasma containing intoxicating materials. Plasmaphoresis provides a means of exchanging plasma rather than whole blood. Blood is withdrawn from the patient and the cells separated from the plasma in a refrigerated centrifuge. The plasma is discarded and the cells are then resuspended in fresh frozen plasma and returned to the patient. The major advantage of plasmaphoresis is the ready availability of fresh frozen plasma in comparison to fresh whole blood. We wish to report a patient with hepatic coma due to viral hepatitis who was treated with plasmaphoresis.

### Case Report

A 69-year-old Caucasian widow was first seen January 30, 1970. She had become clinically jaundiced December 5, 1969, and was told by her local physician that she had hepatitis. Over the following weeks

her jaundice deepened and she began to complain of pruritis. Except for this she was asymptomatic. There was no history of exposure to jaundiced persons, contact with hepatotoxins, transfusions, injections, or medications. The only findings on physical examination were severe jaundice with excoriated skin and mild hepatomegaly. The liver was 15 centimeters to percussion at the midclavicular line and

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**A patient suspected of having persisting viral hepatitis underwent diagnostic laparotomy after eight weeks of unremitting jaundice. The diagnosis of hepatitis was established. Two weeks postoperatively she developed hepatic coma unresponsive to vigorous medical therapy. Plasmaphoresis with plasma exchange was initiated. After 48 hours, and a plasma exchange volume of approximately 7,500 cc. the patient had improved from Grade 5 coma to a neurologically normal status. However, continued borderline liver function resulted in her death three weeks after the initial plasma exchange.**

**In spite of the fatal result in this patient, it is concluded that plasma exchange should continue to be used in selected patients until a more satisfactory form of therapy can be found.**

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mildly tender. There was no splenomegaly or ascites. The patient was alert and felt well despite extreme jaundice. Laboratory data is summarized in *Table 1*. Chest x-ray, KUB, upper gastrointestinal series, intravenous pyelograms, and barium enema were all normal. Liver scan demonstrated an enlarged liver with separation of the right and left lobes. EKG showed only nonspecific repolarization changes.

Because the patient had been jaundiced eight weeks without any definitive diagnosis, she was taken to the operating room and three unsuccessful attempts were made to obtain a percutaneous trans-

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TABLE 1  
SUMMARY OF LABORATORY DATA IN A PATIENT WITH  
ACUTE HEPATIC FAILURE

Date	SGOT MIU %	alk phos MIU %	bili t/d MG. %	alb GM. %	BUN MG. %	Hb GM. %	wbc X 10 <sup>3</sup>	plat X 10 <sup>3</sup>	Am MGM %	Ca/p MG. %	pro TIME	
2/2 .....	900	200	18/15	1.4	28	14	9.5	353		10/3	13	
2/9 .....			13									Surgery
2/10 .....	180	235	11/8									
2/16 .....	185	170	10/8									
2/20 .....	200	190	8									
2/22 .....			8									Coma
2/23 .....	75	105	9/7	1.0	70				138	6/9	22	
2/24 .....	70	110	8			11	24	207				plasma- phoresis 20
2/25 .....			10			13	22	115				plasma- phoresis 10
2/26 .....	70	75	9	2.2	45	12	13	65		8/6	26	plasma- phoresis 4 Keflin
2/27 .....	70	75	10	1.8	38	12						
3/2 .....	80	100	10	1.4	29	13	14	77	77		19	
3/4 .....						14	15	194		7/9		
3/13 .....			12/10		41				58			
3/17 .....			13/10	2.3	81						18	disoriented
3/20 .....			12	2.4								coma
3/21 .....												died

hepatic cholangiogram. Subsequent exploration of the abdominal organs failed to reveal any evidence of neoplasm. An operative cholangiogram demonstrated good filling of the biliary system with no evidence of stenosis. A liver biopsy showed findings consistent with a persisting subacute viral hepatitis.

She pursued an uneventful course until the sixth postoperative day when a superficial wound abscess was drained. On the fourteenth postoperative day mild confusion, disorientation, and asterixis developed. She was started on intravenous fluids, laxatives, neomycin by mouth and protein restriction. She gradually became totally unresponsive, despite intensive medical therapy. At this point plasmaphoresis was initiated. She received 20 units, or approximately five liters of plasma over a ten-hour period. In addition to the plasmaphoresis with plasma exchange, two units of whole blood were given on the first day. The following morning the patient was able to be aroused, but remained markedly obtunded. Ten units of plasma were exchanged over an eight-hour period of time. At the completion of this procedure, the patient was very alert and mentally clear. The following day she had four units of plasma exchanged. Protein restriction and neomycin orally were continued, and Prednisone, 60 milligrams daily,

was started. Over the following two weeks the patient was able to be out of bed and visit with her family. She maintained an albumin in the range of two to three grams per cent without further transfusion therapy. The prothrombin time varied between 18 and 19 seconds, and the SGOT was consistently less than 100/mIU per cent. The plasma bilirubin was not significantly altered by plasma exchange in spite of improvement in other parameters. During the week following plasma exchange she developed pneumonia and was treated empirically with Cephalothin. Three weeks after the initial plasmaphoresis she became disoriented. Over the following two days she gradually became comatose and died without any further attempt at plasma exchange. At autopsy, significant findings were confined to the liver. It weighed 1,650 grams and had a finely nodular cirrhotic appearance. Histology revealed disruption of hepatic architecture with fibrous bands, proliferation of bile ducts, and regenerating nodules.

### Discussion

Davis<sup>2</sup> has shown that standard medical therapy contributes significantly to survival from acute hepatic coma. He presented 16 patients with Grade 4 and 5 hepatic coma, ten of whom died from their

TABLE 2  
RESULTS OF EXCHANGE TRANSFUSION AS THERAPY FOR ACUTE HEPATIC FAILURE

<i>Liver Disease</i>	<i>No. of Patients</i>	<i>Response to Exchange Transfusion</i>	
		TEMPORARY	RECOVERY
Hepatitis .....	33	28	12 (36%)
Drug Reaction .....	7	3	2 (30%)
Nutritional Cirrhosis .....	4	4	3
Hepatoma .....	1	1	0

illness. The surviving patients responded promptly to intensive therapy and, within 48 hours, had normal or near normal sensorium. On the other hand, none of the ten patients who died showed any significant response to treatment. Furthermore, most of the fatalities occurred after three days of intensive therapy. It is these patients who do not promptly respond to medical therapy who must have some form of extraordinary help if they are to survive. Unfortunately, most reports of exchange transfusion and plasmaphoresis fail to discuss in sufficient detail

the clinical status of the patient and the extent of medical therapy prior to initiating exchange transfusion. This makes it difficult to compare the patients who have undergone these procedures; however, Szwed<sup>6</sup> has recently summarized experience with exchange transfusion in this illness. Of 33 patients with hepatitis, 12 eventually survived, giving a survival rate of 36 per cent (*Table 2*). The meaning of this statistic is difficult to determine. It is at least suggestive that exchange transfusion may be of value. Fifteen patients have been reported, who were

TABLE 3  
SUMMARY OF EXPERIENCE WITH PLASMAPHORESIS AND PLASMA EXCHANGE  
IN ACUTE HEPATIC FAILURE

<i>Author</i>	<i>Pt.</i>	<i>Disease</i>	<i>Exchange</i>			<i>Response in Depth of Coma</i>	<i>Comments</i>
			<i>Depth of Coma</i>	<i>DURA- TION (IN DAYS)</i>	<i>AMOUNT (LITERS)</i>		
Sabin	1	Portal cirrhosis	4	3	4.5	2	Sudden death
	2	Portal cirrhosis	4	3	8	1	G.I. hemorrhage
	3	Portal cirrhosis	5	3	9	1	G.I. hemorrhage
Lepore	4	?	5		5	0	Steroid ulcer with hemorrhage
Cree	5	?	5	6	43	0	Survived
Lepore	6	Hepatitis	5	1	10.3	5	Bronchopneumonia—day 1
	7	Hepatitis	5	4½	17.5	5	Bronchopneumonia—day 4½
	8	Hepatitis	5	4	18	5	Cerebral hemorrhage and bronchopneumonia—day 4
	9	Hepatitis	5	12	83.5	0 day 6	Bronchopneumonia—day 17
	10	Hepatitis	5	9	39.5	0 day 8	Bronchopneumonia—day 10
Demeulenaere	11	Hepatitis	4	3	4.75	3	Hemorrhage—day 7
	12	Hepatitis	4	2	6	0	Survived
	13	Hepatitis	4	3	8	0	Survived
	14	Hepatitis	3	6	17	3	Expired
Graw	15	Hepatitis	4	6	39	4	Pneumonia and hypoxia



treated with plasmaphoresis.<sup>7-12</sup> The data on these patients is summarized in *Table 3*. Three of these 15 eventually survived, giving a 20 per cent overall survival rate. All but one of the patients had Grade 4 to 5 coma prior to plasmaphoresis and all but two showed considerable improvement in their neurological status after plasma exchange. In spite of initial improvement, most of the patients succumb due to pneumonia or hemorrhage. It has been postulated<sup>10</sup> that plasma exchange prolongs life so that lethal effects of the hepatitis virus upon the lungs, heart, and brain become apparent. The survival rate of 20 per cent is disappointing. However, if these patients were in a group with a near 100 per cent mortality risk, then even a 20 per cent survival is considerable improvement.

In spite of the difficulties in coming to any firm conclusions on the basis of the material presented, it would seem reasonable to assume that any patient in hepatic coma longer than 48 hours, in spite of intensive medical therapy, is not likely to survive. Likewise, there is enough suggestive evidence to support the proposition that plasmaphoresis may be a useful adjunctive measure in treating hepatic coma. The purpose of the procedure is to buy time for a damaged liver to regenerate itself. Consequently, a primary candidate would be a patient who was in

good general health prior to the onset of a very acute hepatic injury that is potentially reversible.

## References

1. Burnell, J. M.; Dawborn, J. K.; Epstein, R. B., *et al.*: Acute hepatic coma treated by cross-circulation or exchange transfusion. *New Eng. J. Med.* 276:935-942, 1967.
2. Davis, Michael A.; Peters, Robert L.; Redeker, Allan G., and Reynolds, Telfer B.: Appraisal of the mortality in acute fulminant viral hepatitis. *New Eng. J. Med.* 278:1248-1253, 1968.
3. Editorial: Treatment of Fulminant Hepatic Failure. *New Eng. J. Med.* 278:1287-1288, 1968.
4. Sherlock, Sheila: Hepatic coma. *Gastroenterology* 41:1-7, 1961.
5. Editorial: Sustaining life during fulminant hepatic failure. *Ann. Int. Med.* 71:415-417, 1969.
6. Szwed, James J.; Grisell, Ted W., and Mendenhall, Charles L.: Exchange transfusions for intractable hepatic coma. *Arch. Int. Med.* 123:441-444, 1969.
7. Sabin, Stanley, and Merritt, John A.: Treatment of hepatic coma in cirrhosis by plasmapheresis and plasma infusion (Plasma Exchange). *Ann. Int. Med.* 68:1-7, 1968.
8. Lepore, M. J., and Martel, A. J.: Plasmapheresis in hepatic coma. *Lancet* 2:771-772, 1967.
9. Cree, I. C., and Berger, S. A.: Plasmapheresis and positive pressure ventilation in hepatic coma with respiratory arrest. *Lancet* 2:976-977, 1968.
10. Lepore, M. J., and Martel, A. J.: Plasmapheresis with plasma exchange in hepatic coma. *Ann. Int. Med.* 72:165-174, 1970.
11. Demeulenaere, L.; Barbier, F., and Vermiere, P.: Plasmapheresis in hepatic coma. *Lancet* 1:152-153, 1969.
12. Graw, R. J., Jr.; Buckner, C. D., and Eisel, R.: Plasma exchange transfusion for hepatic coma. *Transfusion* 10:26-32, 1970.

23rd Annual

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## "THE PHYSICIAN VERSUS CANCER"

Bernard C. Korbitz, M.D.—Associate Clinical Professor of Medicine and Hematology, University of Wisconsin Medical Center, Madison, Wisconsin. *The Laboratory—New Diagnostic Methods or Latest Tools for Treatment*, Friday, 9:15 a.m. and *The Future of Management of Leukemia*, Friday, 3:45 p.m.

Robert W. McConnell, M.D.—Chairman, Board of Chancellors, The American College of Radiology, Dallas, Texas. *Nuclear Medicine Procedure Aids in Staging of Cancer Patients*, Friday, 9:45 a.m. and *Carcinoma of the Thyroid—A Program of Treatment*, Friday, 2:00 p.m.

James W. Daly, M.D.—Director, Tumor Division, Department of Obstetrics-Gynecology, College of Medicine, University of Florida, Gainesville, Florida. *Carcinoma in Situ Cervix: The Problems of Diagnosis & Treatment*, Friday, 10:30 a.m. and *Lesions of the Vulva*, Friday, 2:30 p.m.

John Spratt, M.D.—Director and Administrator, Ellis Fischel State Cancer Hospital, Columbia, Missouri. *Carcinoma of the Breast—Its Management*, Friday, 11:00 a.m. and *The Small Cancer of the Bowel*, Friday, 3:15 p.m.

Ben Trump, M.D.—Department of Pathology, School of Medicine, Duke University, Durham, North Carolina. *Virology and Its Relationship to Cancer*, Saturday, 9:00 a.m.

Charles F. McKhann, M.D.—Professor of Surgery, University of Minnesota, Minneapolis. *Immunological Aspects of Cancer*, Saturday, 10:15 a.m.

R. Neil Schimke, M.D.—Assistant Professor of Medicine & Pediatrics, University of Kansas Medical Center, Kansas City, Kansas. *Genetics—Its Role in Cancer*, Saturday, 11:15 a.m.

Barth Hoogstraten, M.D.—Professor of Medicine, Director, Clinical Oncology, University of Kansas Medical Center, Kansas City, Kansas. *The Challenge of Cancer Education: The Medical Student and Practicing Physician*, Friday Luncheon Speaker, 12:00 noon.

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# Congenital Lung Cysts

## *Segmental Lung Cysts: A Form of Congenital Bronchiectasis*

RICHARD T. THIO, M.D., and

THOMAS V. THOMAS, M.D., *Kansas City, Missouri\**

### Introduction

Numerous clinical and pathological varieties characterize cystic changes in the lung.<sup>1</sup> Inflammation often complicates and obscures their original nature. Nevertheless, knowledge of onset and duration of symptoms, previous infectious diseases or injury of the respiratory tract, associated anomalies or endogenous disorders, topography and pathology of the lung cysts aid in distinguishing congenital from acquired pulmonary cystic disease. The following report represents a case of lung cysts limited to the anterior and posterior segment of the right upper lobe, suggestive of an isolated developmental defect, an uncommon, localized form of congenital cystic bronchiectasis.

### Case Report

A 26-year-old man was admitted to the Veterans Administration Hospital; Kansas City, Missouri, October 7, 1969.

Since infancy, he had a "wheeze and a rattle" in his right upper chest. In the last seven years he coughed up copious amounts of yellow sputum with streaks of blood in the mornings and after exertion. Alarmed by increasing hemoptysis, he sought his present admission. Diagnosis of congenital cystic bronchiectasis was made in two other institutions in 1961 and 1964, when admitted for the only two episodes of respiratory distress. Clubbing of the fingers and coarse rales in the right upper hemithorax were the prominent physical findings in this otherwise healthy-looking young man.

Complete blood chemistry determinations, sputum cultures, serology studies and skin tests were normal. Bronchoscopy was unrevealing. The only disease found was lung cysts apparently confined to the anterior and posterior segments of the right upper lobe on posteroanterior chest roentgenogram (*Figure 1*) and bronchogram (*Figure 2*). On October 16, the

patient underwent a right upper lobectomy. He went home in good condition and continued to do well.

The operative findings were: normal vascular supply to the right upper lobe; free pleural cavity; and in the anterior and posterior segments multiple cysts, several protruding on the surface.

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**Clinical history, operative and microscopic findings suggest that lung cysts within the boundaries of two segments of the right upper lobe in a 26-year-old man were of congenital origin. Their distribution limited to the anterior and posterior segment is uncommon.**

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The specimen showed multiple cysts arising from the tertiary bronchi and more distal bronchial generations of the anterior and posterior segments of the right upper lobe. These cysts contained thin, yellow, putrid secretions and measured 1 to 2 centimeters in diameter. On microscopy, they had an inner lining of bronchial mucosa surrounded by components of bronchial wall with pericystic chronic inflammation and fibrosis.

### Discussion

Speculations regarding the etiology and pathogenesis of lung cysts abound in medical reports.

Long before the era of antibiotics, Grawitz<sup>2</sup> and Sauerbruch<sup>3</sup> maintained, based on their pathological studies and clinical experience, that the majority of bronchiectasis was congenital. This view is no longer held to be true. Even in children, lung cysts appeared to follow adenoviral bronchiolitis incurred in infancy.<sup>4</sup> Although bronchiectasis in certain ethnic groups,<sup>5, 6</sup> in families, or in conjunction with other developmental defects can be reasonably assumed to be genetically determined, the overall incidence of congenital bronchiectasis does not exceed ten per cent.<sup>7</sup>

Predisposition to bronchiectasis in association with bronchial asthma, histiocytosis X and mucoviscidosis are well recognized.<sup>8-10</sup> Survivals of patients with mucoviscidosis into adolescence are reported.<sup>10</sup> Evi-

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Figure 1. Posteroanterior radiograph of chest shows cysts, indicated by arrows, in right upper lobe, sparing apical segment.



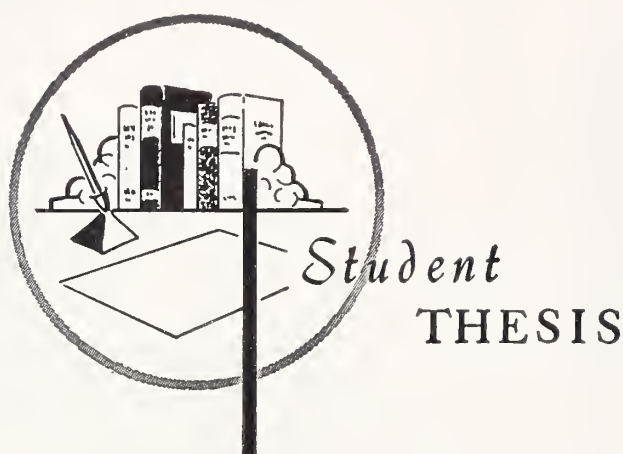
Figure 2. Right lateral bronchogram outlines air-fluid levels in cysts in posterior and anterior segments of right upper lobe.

dence of these conditions in this patient or his family was completely lacking. Aspirated foreign body or tuberculosis known to produce localized bronchiectasis was also absent in this instance. Congenital cystic lesions of the lung range from those with normal bronchopulmonary vasculature to those with systemic arterial supply.<sup>1</sup> The normal vascular supply to the right upper lobe in this patient does not preclude the cysts in it to be congenital. The location and histological features of these cysts and their occurrence in a young man correspond with descriptions of typical congenital cysts of the lungs.<sup>1, 6, 9</sup>

Unresponsiveness to medical management renders surgery of these cysts, regardless of their origin, most rewarding. Locating the lesions on roentgenograms and bronchopulmonary toilet are indispensable preparatory to operative treatment.

## References

1. Culiner, M. M.: Intralobar bronchial cystic disease, the "sequestration complex" and cystic bronchiectasis. *Dis. Chest*. 53:462, 1968.
2. Grawitz, P.: Über angeborene Bronchiektasie. *Virchows Arch. Path. Anat.* 82:217, 1880.
3. Sauerbruch, F.: Zur Frage der Entstehung und der Chirurgischen Behandlung von Bronchiektasien. *Arch. Klin. Cir.* 148:721 1927.
4. Gold, R., Wilt, J. C., Adhikari, P. K. and MacPherson, R. I.: Adenoviral pneumonia and its complication in infancy and childhood. *J. Canad. Assn. Radiol.* 20:218, 1969.
5. Hinds, J. R.: Bronchiectasis in the Maori. *New Zealand Med. J.* 57:328, 1958.
6. Lichtenstein, H.: Congenital multiple cysts of the lung. *Dis. Chest* 24:646, 1953.
7. Spath, F. und Finsterbusch, W.: Langzeitergebnisse bei der Resektionsbehandlung idiopathischer Bronchiektasien. *Langenbecks Arch. Chir.* 326:25, 1969.
8. Avery, M. E., Riley, M. C. and Weiss, A.: The course of bronchiectasis in childhood. *Bull. Johns Hopk. Hosp.* 109:20, 1961.
9. Field, C. E.: Bronchiectasis. Third report on a follow-up study of medical and surgical cases from childhood. *Arch. Dis. Child.* 44:551, 1969.
10. Shwachman, H., Kulczycki, L. L. and Khaw, T. T.: Studies in cystic fibrosis. *Pediatrics* 36:689, 1965.



## *Drug Interactions*

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EVERY DRUG has its particular side effects that occur at a typical frequency. However, if two or more drugs are given simultaneously, new effects may appear, including adverse reactions that would not occur had either of the drugs been given alone. These effects can be produced by one drug affecting the metabolism of another through a change in physiological status or disposition, or by competition at an effector site. This phenomenon is called drug interaction and may be responsible for as much as 40 per cent of adverse reactions in patients. These interactions are important causes of both unexpected toxic and therapeutic effects, and are proportional to the number of drugs given and the duration of administration.

In his classic study of adverse reactions at Johns Hopkins Hospital, Cluff found the overall incidence to be 13.6 per cent, which may be related to the fact that the average patient there received 15 different drugs during the course of hospitalization.

Although drug interactions may be beneficial, they are most often recognized when they increase mortality or morbidity. The frequency of adverse drug interactions in clinical practice makes it mandatory

for physicians to know the drugs and the mechanisms involved. The number of drugs involved in these interactions are too great to memorize by trade names, but classification by pharmacologic group and mechanism of interaction or locus of action is feasible. This approach helps in diagnosing an interaction, in predicting its effects and duration, and in selecting the most logical and effective therapy for the patient.

There are five major steps in the metabolic history of any drug, namely, absorption, reversible binding to plasma or storage tissue component, action at receptor site, biotransformation, and excretion. Thus, when two drugs are given at the same time each may influence the behavior of the other by direct interaction at the site of absorption, in transit, at the receptor site, by metabolic alteration, or by influencing excretion, with the effects of the combined drugs being inapparent, antagonistic, or synergistic. Some of the more important physiochemical properties of a drug that influence its passage across the cell membrane, and consequently its metabolism, are its size, shape, degree of ionization, and the lipid solubility of its ionized and nonionized forms.

Absorption from sites of administration is dependent upon drug solubility and concentration, vehicle, particle size, circulation to the site of absorption, area of absorbing surface to which the drug is exposed, and route of administration. Certain drugs are restricted in their distribution and in their potential effects as they cannot pass cell membranes

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\* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. Pelton is serving his internship at Sioux Valley Hospital, Sioux Falls, South Dakota.



after absorption. In addition, some drugs may accumulate in various areas as a result of binding, dissolving in fat, or active transport.

An important potential influence upon a drug's effect is the extent to which the drug is bound to plasma protein. Most drugs are bound to the albumin fraction, and the differences in degree of binding are due essentially to varying affinity between the drug and its binding site on the albumin molecule. The fraction of drug bound to plasma protein is generally regarded as not pharmacologically active; it is the free portion that is available to produce the pharmacological effect. Such changes may occur when two drugs that are bound to albumin are competing for the same site. The drug with the greater chemical affinity for the protein (i.e., phenylbutazone) will displace a fraction of the other drug (i.e., coumarin anticoagulants), and thus increase the latter drug's free or unbound portion with an increase in pharmacologic effect.

Although much of the information concerning the biotransformation of drugs is based upon observation in laboratory animals, with over 200 drugs and other chemicals now known to stimulate drug metabolism in these animals, available clinical studies indicate that similar mechanisms also occur in man. However, the rates at which the reactions proceed in the various species are often very different.

One key to delineation of drug interaction is understanding the role of liver microsomes as producers of enzymes responsible for drug metabolism. The duration and intensity of action of many drugs are largely determined by the speed at which they are metabolized in the body of enzymes in liver microsomes. The activities of these enzymes can be altered by dietary and nutritional factors, hormonal changes in the body, and the ingestion of foreign chemicals. The increase in activities of drug metabolizing enzymes in liver microsomes produced by various compounds appears to represent an increased concentration of enzyme protein and is referred to as "enzyme induction." This is important pharmacologically, for it leads to an accelerated biotransformation of drugs *in vivo* and so alters the duration and intensity of drug action in animals and man. The characteristic pharmacological actions of these compounds on the organism are extremely diverse, and there is no apparent relationship between either their actions or structure and their ability to induce enzyme. It is of interest that most of the inducers are soluble in lipid at a physiological pH, with considerable variation in the quantity of inducer necessary to have an appreciable effect on the enzyme.

Inducers are of at least two types, those such as phenobarbital that stimulate varied pathways of metabolism by liver microsomes; and those like poly-

cyclic aromatic hydrocarbons, that stimulate a more limited group of metabolic reactions. The two types of inducers also differ in the course and intensity of induction.

When the enzyme that acts on a drug is induced, the drug metabolizes and disappears more rapidly, and the metabolite is formed more quickly. The consequences for the organism depend upon the relative activity of the drug and its metabolite. When the metabolite has little effect of its own, enzyme induction speeds the termination of action of the drug by accelerating its inactivation. When the metabolite has the same effect as the drug and is of comparable or greater potency, or where the effects seen on administration are actually those of the metabolite, enzyme induction may intensify the effects by accelerating the production of the metabolite.

Repeated administration of a drug often results in the induction of enzyme that metabolizes the drug so that chronic treatment with the drug accelerates its metabolism, lowers its blood level, and decreases its effect.

Androgens, estrogens, progestational steroids, insecticides, norepinephrine, carcinogenic hydrocarbons, insulin, and thyroid hormone influence drug action by altering the activity of drug-metabolizing enzymes in liver microsomes, but the molecular basis for this liver microsomal enzyme induction by structurally unrelated drugs is unknown. Neither does there seem to be any standard part of the liver cell where the drug metabolizing enzymes are concentrated, although most workers feel that they are located in the endoplasmic reticulum of the cell. There also appears to be low levels of these enzymes present in lung, gastrointestinal tract, and kidney.

Almost every aspect of enzyme induction is potentially important to human welfare since man is given all the drugs that induce enzyme in animals, and many of the substances he encounters in his environment are known to stimulate the activities of liver microsomal enzymes in experimental animals. Whenever the liver microsomal enzymes are induced in man, one can expect change in the duration and intensity of drug effects, and it is unfortunate that patients so often are given several drugs at the same time without proper consideration of the possibility that one drug may interact with another. Adding or subtracting a drug can have serious consequences for the metabolism and actions of other drugs being given. Drug interactions in man are not limited to a stimulating effect on drug metabolism, since examples are known in which one drug can inhibit the metabolism of another.

The significance of these interrelationships in therapy is underlined when one notes that among those pharmacologic substances most actively affecting the

liver microsomal enzymes are some of the drugs most commonly prescribed for hospitalized patients, either as specifics for disease entities or as modalities for increasing the general comfort and well-being of the patient. It has been learned from clinical experience that barbiturates and other tranquilizers, oral hypoglycemic agents, anticoagulants, and antihistamines are especially hazardous. The problem is compounded because there are some population groups that can be said to be more prone to problems arising out of observations in their liver microsomal enzyme systems. This can be noted at the age extremes, among the newborn and among the very old.

It is of considerable interest that certain inducers of enzymes have been used therapeutically for treatment of hyperbilirubinemia in jaundiced, erythroblastic newborns, and also for the treatment of Cushing's syndrome. Likewise, the halogenated hydrocarbon insecticides can markedly influence the acute toxicity and other effects of drugs, but inducers of enzymes can deplete the body of these substances which accumulate in body fat and are metabolized by hepatic microsomal enzymes.

Drugs are eliminated from the body either unchanged or as metabolites, with most being excreted via the kidneys by passive glomerular filtration, active tubular secretion, and passive tubular diffusion. Aside from the general influence of age or renal disease, changes in excretion of a drug produced by another drug are related mostly to changes in urinary pH. Other routes of excretion consist of pulmonary, liver, salivary glands, and sweat glands.

### Summary

When polypharmacy cannot be avoided, an awareness of the frequency and recognition of early reactions is mandatory. Such reactions or interactions may be recognized as a frank adverse effect, or more frequently by the subtle loss or exaggeration of the clinical effect of one of the drugs being administered.

Given adequate knowledge of the pharmacology of a particular compound, we can often predict these effects of interaction, even though the detailed knowledge required is not often available until an investigation after the fact. Although certain drug interactions which may be deleterious can be predicted without clinical investigation, many adverse consequences of administering one drug with another become apparent only after widespread use of the combination.

It may not be wise to withhold therapy because of possible drug interactions, but neither is it wise to presume that drugs having different therapeutic purposes are necessarily free of harmful interactions. In the absence of precise information, multiple drugs should be used cautiously and only with clear justification. Even drugs with apparently bland individual

effects may become hazardous when administered together.

In general, if the potential toxicity of a drug is great, or if the difference between the amounts required to produce a therapeutic effect and toxicity is small, one must be more concerned about drug interactions.

### References

- Bressler, A. B.: Combined drug therapy. *Am. J. Med. Sc.* 89, February 1968.
- Clinical effects of interaction between drugs. *Proc. Roy. Soc. Med.* 58:943, 1965.
- Conney, A. H.: Pharmacological implications of microsomal enzyme induction. *Pharm. Revs.* 19:317, 1967.
- Conney, A. H.: Microsomal enzyme induction by drugs. *Pharm. for Physicians* 3: No. 12, 1969.
- Cucinell, S. A. et al.: Drug interactions. *J. Clin. Pharmacol. Ther.* 6:420, 1965.
- Fouts, J. R.: Drug interactions: Effects of drugs and chemicals on drug metabolism. *Gastroenter.* 46:486, April 1964.
- Goodman, L. S. and Gilman, A.: *The Pharmacological Basis of Therapeutics* 1:27, 1965.
- Hunninghake, D. B. and Azarnoff, D. L.: Drug interactions with Warfarin. *Arch. Inter. Med.* 121:349, 1968.
- Hunninghake, D. B.: Drug interactions. *Postgrad. Med.* 47:71, 1970.
- Jenkins, L. C.: The interaction of drugs, with particular reference to anesthetic practice. *Canad. Anesth. Soc. J.* 15:111, 1968.
- Kuntzman, R.: Drugs and enzyme induction. *Ann. Rev. Pharm.* 9:21, 1969.
- Morrelli, H. F. and Melmon, K. L.: The clinicians' approach to drug interactions. *Calif. Med.* 109:380, 1968.
- Monroe, J. F. and Cluff, L. E.: Problems with multiple drugs. *Int. Anesth. Clin.* 6:19, Spring, 1968.
- Owen, J. A.: Drug interactions. *Va. Med. Mo.* 96:35, 1969.
- Prescott, L. F.: Pharmacokinetic drug interactions. *Lancet* 2:1239, 1969.
- Schrogić, J. J.: Drug interactions. *J. Amer. Pharm. Assn.* 9:208, 1969.
- When Drugs Interact. *Hosp. Practice* 1:72, 1966.

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## The Dean's Report

In the following pages, the JOURNAL presents the major part of the report made in November 1970 to the Board of Regents by Charles E. Brackett, M.D., Acting Dean of the Medical School at the Kansas University Medical Center. We believe the report is significant because it encompasses the medical manpower situation as it exists in Kansas. It shows the present situation with its deficiencies. (Although figures from 1968 are used in some instances because the figures for 1969 were not available at the time of the preparation of the report, the latter show slight gains but no change in the basic relationships or problems.) It reflects the current efforts of the Medical Center to meet the problems. Most significantly, perhaps, it presents plans and projections for the future.

We urge you to give this report careful attention. It contains much information that will assist in an objective evaluation of the problems of medical service in Kansas which each physician must have if he is going to interpret these problems to laymen. It informs you of the planning concepts of the faculty at the Medical Center. It offers some insight into the intents and philosophy of medical education in Kansas today. It provides a basis for qualified opinion and advice by physicians in the implementation of the future programs of medical service.

The majority of Kansas physicians are products of the Kansas University Medical Center. The Medical Center is the prime source of postgraduate medical education in the state. It is the major source of physicians and other medical personnel who will be the agents for overcoming the deficiencies and elevating the quantity and quality of medical service to the state. The presentation of the report at this particular time—while the Legislature is in session—is not without purpose. We believe the Kansas Medical Society and its members individually should be the prime impetus in the development of the medical care plan in the state and we believe this to be important information to that end.—D.E.G.

# Educational Needs for Better Health Care Delivery in Kansas

CHARLES E. BRACKETT, M.D.,\* *Kansas City, Kansas*

In 1967 the medical school faculty studied the problems and definition of objectives necessary for medical education to meet the health care needs of Kansas in the seventies. Their recommendations emphasized the importance of regionalization for education and care delivery and specifically included additional directions for the preceptorship program, expansion of house staff programs in affiliated hospitals throughout the state, new allied health programs and expanded programs of postgraduate education in regional centers throughout the state. Last year, the "Package Legislation" permitted:

1. Shortening of the medical school curriculum from four to three years. The second and third year have been in operation since July 1970 and the first year is scheduled to start July 1971. This will produce 125 additional physicians in 1974.
2. A start has been made in the affiliation program by supplementation of house staff positions and partial support of faculty in affiliation hospitals in the state. Guidelines for these affiliation programs have been developed.
3. A Department of Family Practice has been established at KUMC. Appointment of a departmental chairman is expected shortly and efforts are being made to acquire needed facilities to house the department.

Today, financing of medical education is an extremely difficult and complex task. The needs are great and cost escalation makes delay expensive. As part of further educational planning to meet health care needs, a report was prepared and submitted to the Board of Regents in November 1970 which examined the education programs necessary to meet projected health care requirements in the seventies. What follows is an abridgement of the three volume report. It is submitted in the hope that it may furnish information of interest to physicians in Kansas.

## Introduction

THERE IS NEED for improvement of health care delivery in Kansas, particularly in rural and inner city areas.

This report reviews the status of education in the health fields. It is intended to serve as a basis for developing educational programs to meet health manpower needs in the state.

It is now generally agreed that medical care for

the individual is a right based upon the social benefits of personal good health. Today, society must be prepared to pay for this care. Hospitals, physicians, and private agencies can no longer assume the burden of costs beyond the patient's ability to pay as they have done in the past. In the long run the payment of costs and the benefits to society will tend to balance.

It is important to differentiate between health maintenance (an individual and societal responsibility) and health care (professional physician, nurse, and allied health responsibility).

The goal of any system for delivery of health care is the maximum availability of appropriate health services in several categories.

- Prevention of disease and of disability

A preventive program faces many obstacles. Ignorance, apathy and commercial exploitation contribute to smoking, improper food, lack of exercise, drug abuse, alcoholism, unwanted pregnancy, avoidable diseases, emotional stress and disregard of accident hazards. Environmental hazards are increasing through air, land and water pollution, radiation exposure, noise, accidents and ecological imbalance. These are individual and societal responsibilities.

- Improved emergency care, similar to police and fire protection is needed to sustain life until medical treatment can be obtained.
- Ready access to medical services should be available to all persons, plus the means of bringing together the patient and the source of care.
- Planning is needed to develop regional state health care resources to their full potential.

Categories of health services include personal services; community oriented services such as public health, health education, community organization and environmental control; research in health; and education for health professionals.

The evidence of need for improvements in the availability, comprehensiveness, continuity, and individualized attention, particularly amongst the indigent, appears in the delays experienced in securing care, the inability of physicians to accept new patients, the inability of the consumer to make use of his purchasing power, lack of a clearly defined care system and the fact that some persons receive no medical care at all. True availability is the product of the care delivery system  $\times$  its capacity  $\times$  distribution  $\times$  cost.

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Analysis of the Booz-Allen Report and of Comprehensive Health Planning (CHP) and Regional Medical Programs (RMP) data reveal that Kansas is clearly deficient in numbers of health care workers in many categories. For physicians the national average is 131 active, non-federal per 100,000 population. Kansas has 110. There is a geographical maldistribution in favor of urban areas, leaving deficiencies in rural and poverty areas. There is a maldistribution by medical specialty, particularly primary physicians and of certain nursing and allied health workers. Even a proper distribution by population density will not solve all the problems of health care needs in scattered rural areas or in poverty urban areas. Here quite a different approach is required, emphasizing development of economic, social and educational facilities and sound systems of health care delivery. Therefore, substantial innovations in the health delivery systems are required, calling for new types and increased numbers of health workers. Furthermore, new systems are needed in which they can work effectively.

Clearly, a cooperative effort involving citizens, physicians, providers, payers and legislators is needed if a successful plan for Kansas is to evolve. We wish to emphasize that all figures used and developed in this report are estimates and will be revised as further study reveals more conclusive data. This report suggests only the general forms such health systems might take, likely requirements for health professionals and the educational programs needed to produce the personnel needed.

We have sought to outline the magnitude of the problem so that if conditions permit, consideration of implementation could be given.

## Health Care Needs in Kansas

### MANPOWER AND DISTRIBUTION

One way is to begin with existing manpower totals and add estimates of those necessary to meet both known existing needs and projected future needs. The disadvantage of this method is that it reflects only present patterns of care and distribution of skills. Yet these form the only available basis for future projections. Tables 1 and 2 show that health manpower in Kansas is essentially at national parity with the exception of medical doctors, licensed practical nurses, radiology and laboratory technologists, inhalation therapists and dietitians. Regional manpower deficiencies exist in these and other categories, but cannot be well documented until completion in 1971 of a current RMP-CHP manpower study. Regional distributions for 1968 are shown in Figures 1-9 and Tables 3, 4 and 5.

#### 1. Physicians—numbers

The status-1970 for physician manpower in Kan-

sas is shown in Table 1, as well as the number of physicians Kansas needs in 1970 and 1980 based on the United States physician-population index. Distribution by specialty and size of county is shown in Table 3 and Figure 3a. The people's awareness of this is reflected in the study reports of the Kansas Department of Economic Development (KDED). Figure 4 shows that in the 11 regions of the state, 51 to 64 per cent of the individuals asked believed that there was a moderate to great need for more physicians and allied health personnel in their region. Figure 1, a computer generated contour map of physician population in Kansas, shows the high concentrations in urban Kansas City, Topeka, and Wichita. When numbers of physicians is compared to population (physician/population ratios, Figure 2) there is still a striking correspondence of physicians to urban populations. These all confirm one simple fact: doctors congregate where people congregate. Other factors may additionally increase the numbers of doctors in urban areas. Thus, while the distribution of physicians may be reasonable relative to population densities, there are serious problems for rural Kansas due to geographical dispersion and low population densities.

The number of medical specialists is low in the state, particularly as related to direct patient care, e.g. Internal Medicine, Pediatrics, Family Practice and Obstetrics and Gynecology (Table 1). The distribution and availability of these specialists is distorted, particularly by their strong localization around urban areas where the facilities supporting specialized medical care are more likely to be existent. Table 3 shows physicians by type of practice and their distribution by county groups, i.e. size of populations, as explained in the legend of Figure 3a. County group 5 has Reno, group 6 has Shawnee and Sedgwick-Butler and group 8 has Wyandotte and Johnson counties. The table shows the deficiency of physicians compared to the U. S. and West-North Central regions in all except group 6 and 8 for nearly all practice categories. This deficiency is most marked in the more rural county groups, particularly in the categories of total patient care, office practice, medical and surgical specialties and hospital based practice. There is a relative deficiency of general practitioners in metropolitan areas of Kansas where more primary care is given by specialists. However it is our belief that all areas of the United States are deficient in physicians delivering primary care. Rural hospital bed deficiencies are also shown in Table 3. These data are graphically displayed in Figure 3a.

We believe that there is an even more critical shortage of primary health care physicians than the 1970 deficit indicates, especially in family practice physicians. The present health care system exaggerates the deficiencies in several ways:

TABLE 1  
PHYSICIAN MANPOWER  
All figures refer to ACTIVE individuals

Type	1970				1980			
	1	2	3	4	5	6	7	8
	U. S. INDEX PER 100,000	KANSAS INDEX PER 100,000	KANSAS SUPPLY 1970	KANSAS SHOULD HAVE AT NAT. PARITY	DEFICIT BASED ON NATIONAL PARITY	PROJECTED U. S. INDEX PER 100,000	KANSAS SHOULD HAVE AT NAT. PARITY	KANSAS GROWTH NEEDS 1980
Total, Active	131	110	2,488	2,960	472	160	3,840	1,352
HOSPITAL-BASED	36	30	673	812	139	44*	1,056	383
Training	17	16	364	382	18	22*	528	164
Radiology*	2.4	1.3	28	55	27	3*	72	46
Pathology*	3.6	2.0	45	81	36	4*	96	51
Psychiatry	5	5.8	129	113	—	5*	120	—
Other	8	4.8	107	181	74	10*	240	133
OFFICE-BASED	95	80	1,815	2,150	335	116*	2,784	969
Family Practice	31	28	627	700	63	38*	912	285
Internal Medicine	16	14	312	358	46	20*	480	168
Pediatrics	5	3	74	116	42	8*	192	118
Ob-Gyn	6.5	3	65	146	81	8*	192	127
Surg. Specialties	16	14	330	360	30	18*	422	92
General Surgery	9	10	220	207	—	10*	240	20
Radiology	3.1	0.7	15	70	55	3*	72	57
Pathology	1.1	0.8	20	25	5	1*	24	4
Psychiatry	5.4	6	133	121	—	8*	192	59
Other	1.9	0.8	19	42	23	2*	48	29
Total, Inactive			94					

1. U. S. Index per 100,000 based on population of 200,000,000.  
2. Kansas Index per 100,000 based on population of 2,257,000.  
3. Kansas Manpower Supply 1968-1970 Manpower data-RMP.  
4. Kansas Manpower Supply if National Parity were achieved.  
5. Deficit in Kansas Manpower based on National Parity (4-5).  
6. Projected U. S. Index per 100,000 in 1980 (\*figures are our estimates, no data available).  
7. Kansas Manpower Needs in 1980 based on National Parity.  
8. Kansas Manpower Growth requirements to reach National Parity between 1970-1980—population estimate 2,400,000 (6% increase).



TABLE 2  
NURSES AND ALLIED HEALTH PROFESSIONALS

Type	1970						1980	
	1	2	3	4	5	6	7	8
	U. S. INDEX PER 100,000	KANSAS INDEX PER 100,000	KANSAS SUPPLY 1970	KANSAS SHOULD HAVE AT NAT. PARITY	DEFICIT BASED ON NATIONAL PARITY	PROJECTED U.S. INDEX PER 100,000	KANSAS SHOULD HAVE AT NAT. PARITY	KANSAS GROWTH NEEDS 1980
Active								
Registered Nurses	338	370	8,323	7,740	—	400	9,600	1,277
Licensed Practical Nurses	114	106	2,416	2,570	154	200	4,800	2,384
Occupational Therapists	3.2	4.2	95	72	—	6	144	49
Physical Therapists	6.5	6.1	137	147	10	12	288	151
Inhalation Therapists	3.5	1.3	30	79	49	5	120	90
Clinical Psychologists	4.5	5.7	130	102	—	6	144	14
Hearing and Speech Therapists	8	9.3	223	181	—	8	192	—
Dietitians	17	11.7	270	383	113	19	456	186
Social Workers	10	8.9	208	226	23	12	288	85
Laboratory Tech. and Aides	48	28	645	1,080	435	72	1,730	1,085
Radiologic Tech. and Aides	42	10	239	950	711	46	1,100	861
Medical Record Librarians	6	6.1	138	135	—	7	168	30
New Careers								
Nurse Clinicians						24*	576	576
Physicians Assistants						24*	576	576
Emergency Care Specialists						5*	120	120
Intensive Care Specialists						5*	120	120
Health Educa. Specialists						24*	576	576

(See legend, Table 1.)

DISTRIBUTION OF PHYSICIANS IN KANSAS

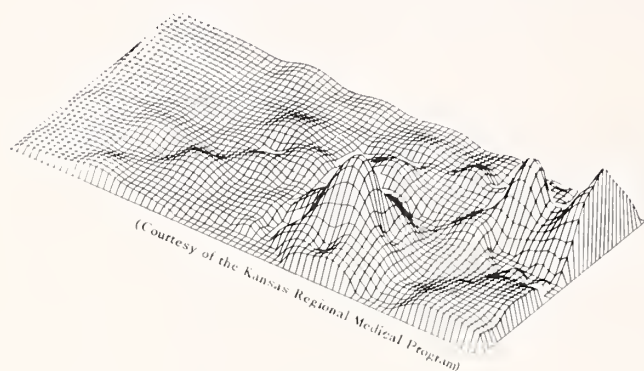


Figure 1

PHYSICIAN/POPULATION RATIOS IN KANSAS

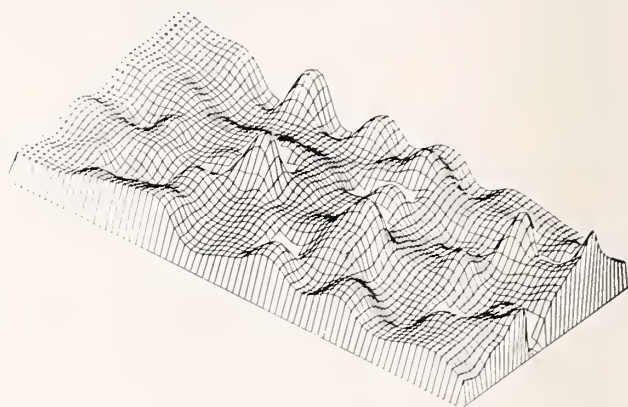


Figure 2

- The physician is the only real access point.
- Private and Federal insurance programs have increased demand without corresponding increases in availability of manpower.
- Provisions for distribution of services according to need or demand is deficient in areas.
- Increased expectations due to higher standards of living and education.

An additional factor determining manpower need is the age distribution of our physicians. In 1968, 20.3 per cent of our physicians were 50-59 and 19.5 per cent were over 60 years of age. Thus, nearly 30 per cent of our physicians are approaching the last decade of their professional life. These data are shown in Figure 5. Based on these data, Gray, Decatur, Haskell, and Rush counties need to replace all of their physicians by 1980 and Cheyenne, Rawlins, Phillips, Jewell, Ellsworth, Stafford, Washington, Nemaha, Clay, Jackson, Wabaunsee, Marion, Chase, Marshall, Jefferson, Mitchell, Wallace, Geary, Harper, Meade, Morton, Greenwood, Coffey, Woodson, Franklin and Crawford counties will need to replace at least half of their physicians within that time. Elk and Stanton counties have no doctors.

Table 4 shows age distribution by specialty.

## 2. Physician Distribution

The deficits, maldistribution, and age of our physician population are problems for 1970 and the future. We must also take note of the population shifts from rural to urban areas and the impact of the interstate and turnpike road systems on the mobility of people and their access to medical care. In the urban areas, shifts of significant population to suburbs depletes inner city manpower of all types, but particularly those related to health services. Additional forces of change include professional redirection through re-education; development of new careers which attract young graduates away from ac-

tive patient care delivery; the advent of new methods and systems of health care delivery which require different numbers and distributions of physicians; the impact of recreation, transportation, industry and schools upon the decision-making which leads a physician to settle in Kansas; the changing patterns of referral between physicians and changing patterns of utilization of the physician's time between office, the hospital and patient's residence, and new technology including computers, automation and communication which should enhance the transfer of patient information between physicians and significantly alter the relationships of physicians to each other and the management of patients. A particularly significant force for change is the movement of physicians from solo practice into groups and clinics where they are surrounded by their peers who provide professional stimulation and technological and technician support unavailable in remote communities and where their families find schools, recreation, shopping and other facilities they believe essential to modern living. Evidence to support the above is given in Figure 6 which shows the migration of physicians to urban areas where population, professional and social facilities are increasing. An example is the urban distribution of hospital beds shown in Figure 7.

Although detailed conclusions await completion of the current RMP-CHP study, Marshall's study of a nine-county area in Southeast Kansas highlights the problems of health manpower distribution. It and KDED data suggests that the rural population is declining or, if not, the younger segment is declining and the older segment increasing and stabilizing. A decline in social, economic and recreational opportunities leads to population shifts, followed by the physician and other health care workers. If more than ten miles or twenty minutes travel is involved, medical care may not be sought. In addition, dissatisfaction may include physician scarcity, long wait-



- Beds/Physicians
- Physicians
- Pop/Physician

PHYSICIANS IN KANSAS—1968

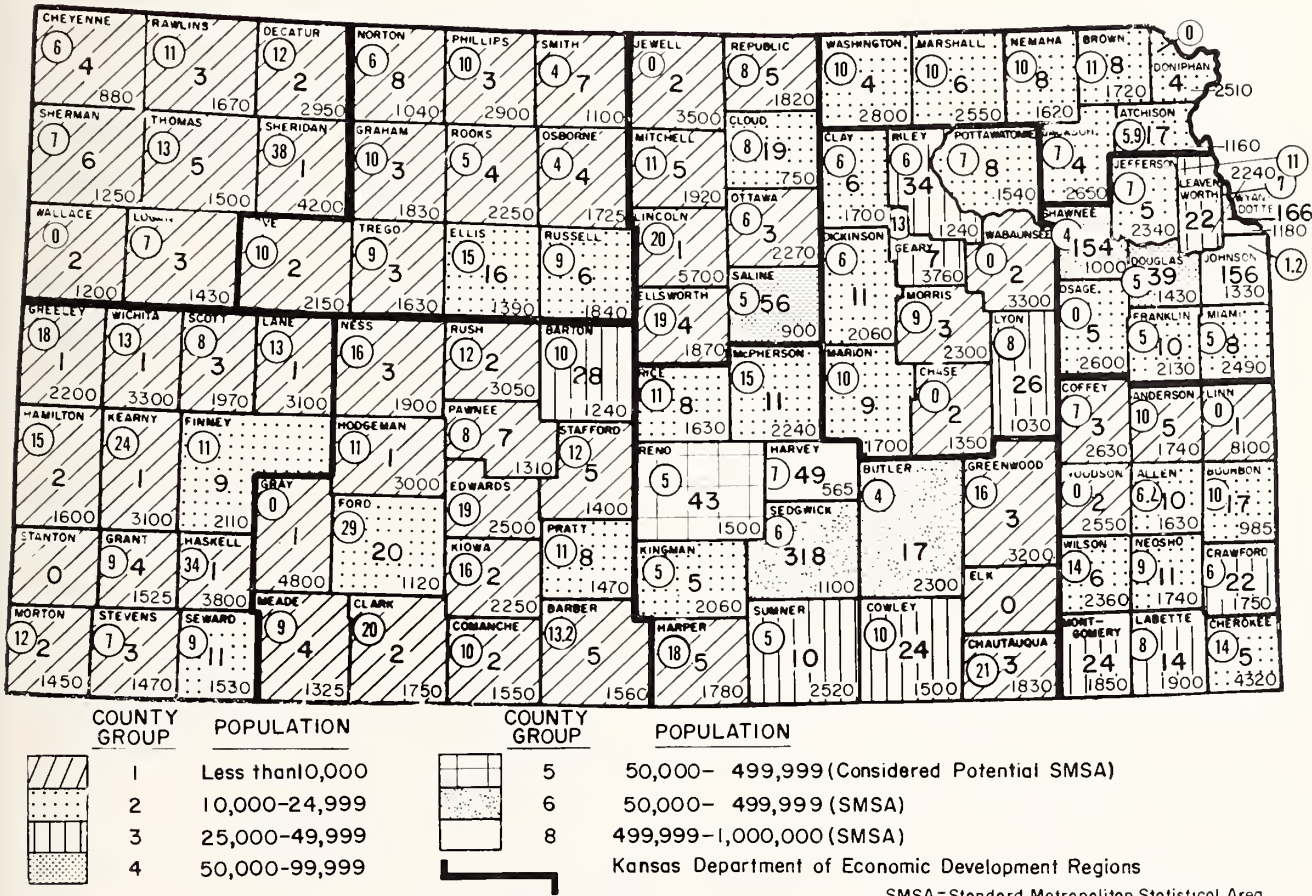


Figure 3a

ACTIVE NON-FEDERAL PHYSICIANS IN KANSAS—1969    Total: 2361

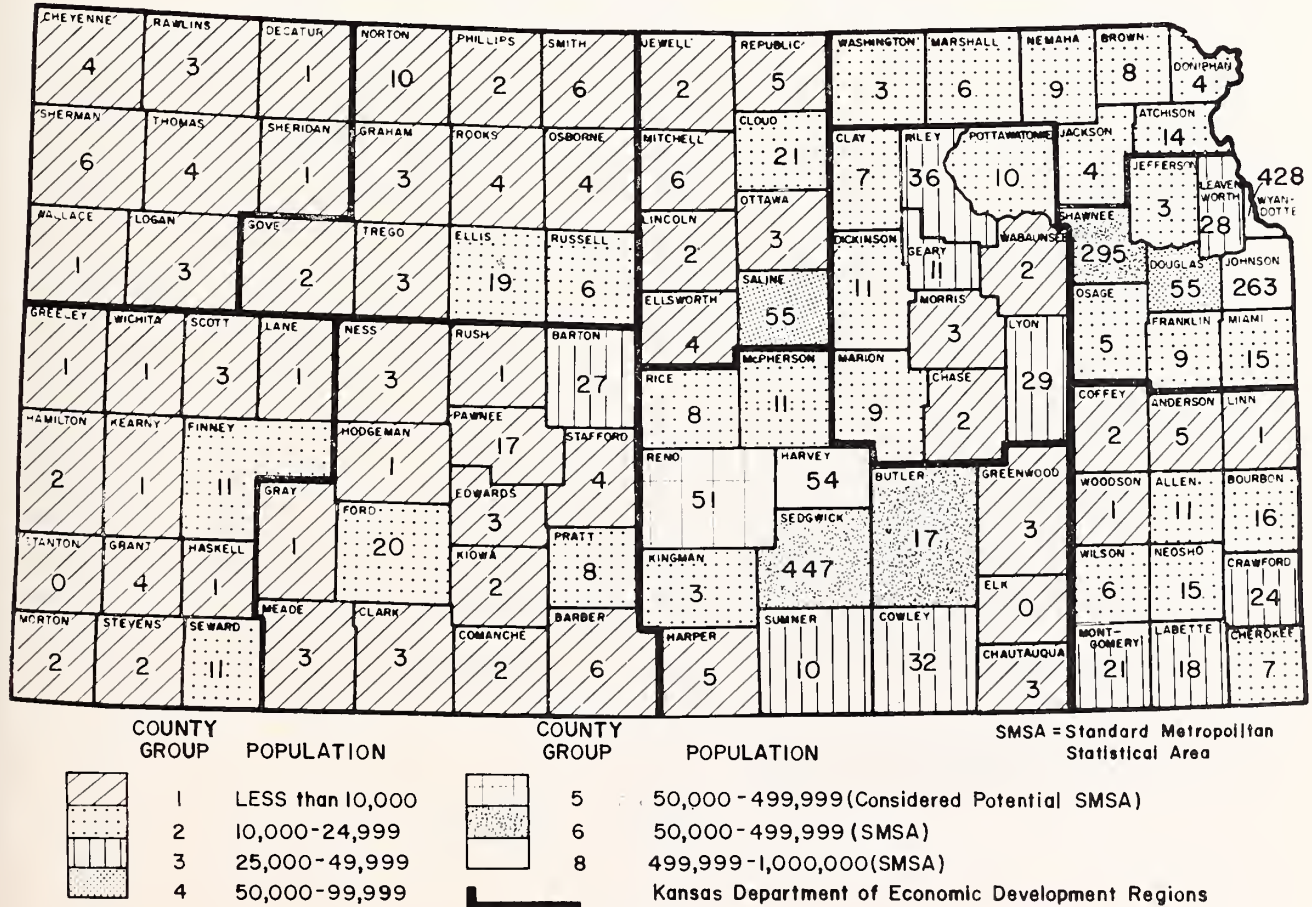


Figure 3b



ing periods, brief and incomplete examination, lack of house call services, and concern over lack of any source of emergency care.

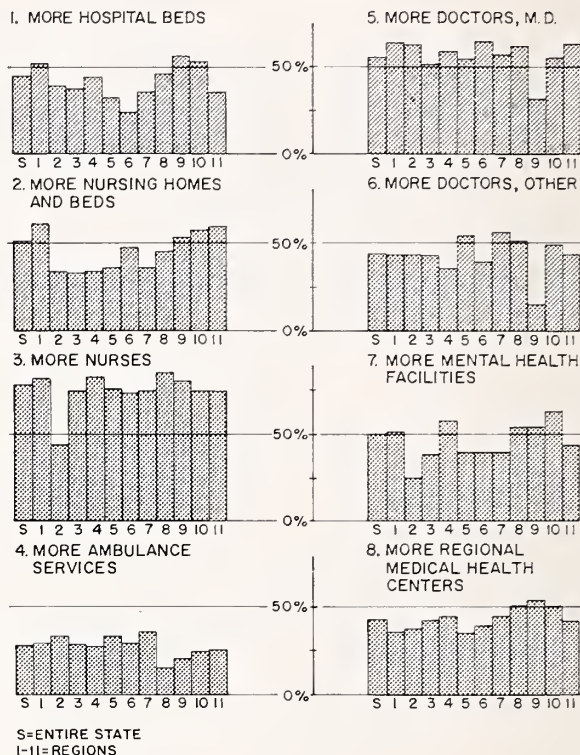
Physicians leave rural communities because of lack of professional support and facilities; lack of social and educational opportunities for the doctor's family; and lack of recreational opportunities.

It, therefore, appears unrealistic to expect to be able to recruit physicians into rural areas, even if it were possible to do so, since data shows that the physician will soon migrate. Factors which will reverse this trend are those which will reverse the general migration from rural areas: increased economic, employment, social and recreational opportunities. Short of this, the health care problem of rural Kansas can be met most realistically by extension of the concept of regionalization of health care systems, now partially in operation in Kansas.

A similar problem exists for the inner city and especially for economically depressed areas. Here migration of population to the suburbs has created low economic areas with attendant health maintenance and health care problems. Minority groups are especially affected. We need increased manpower opportunities in all health careers for minority groups, but especially for physicians. This alone will not solve the inner city problems. Again, new and better systems of health care delivery are needed.

SURVEY OF 11 REGIONS-RESPONSE TO EACH OF 8 QUESTIONS

Percent of respondents stating a moderate to great need for each item



KANSAS DEPARTMENT OF ECONOMIC DEVELOPMENT

Figure 4

DOCTORS OVER 60 BY COUNTY - 1970

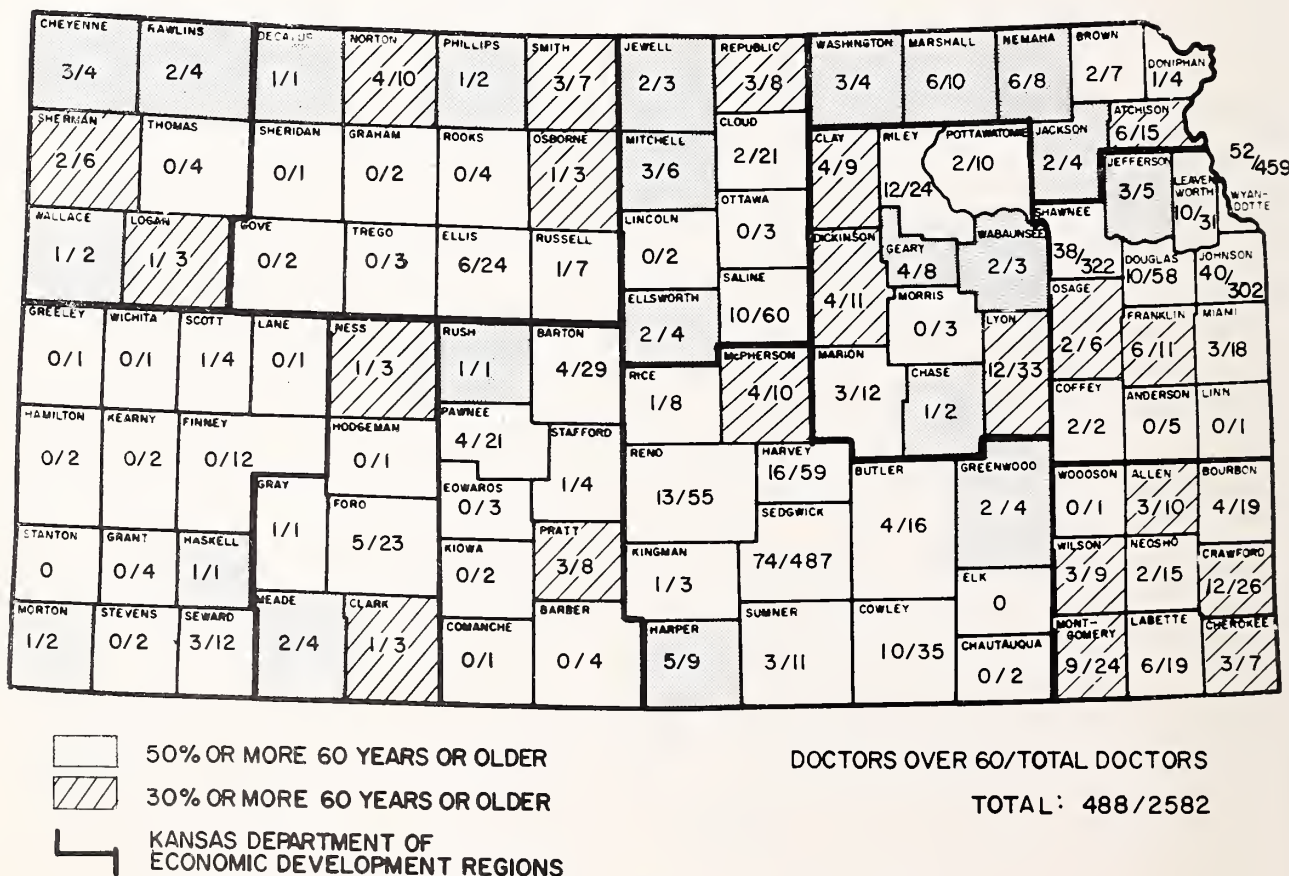


Figure 5



TABLE 3  
COMPARATIVE PHYSICIAN DISTRIBUTION BY POPULATION AND TYPE OF PRACTICE

Total Non-Federal Physician	Total Patient Care	TOTAL OFFICE PRACTICE	Patient Care			Other HOSPITAL BASED PRACTICE	Other Professional Activity	Inactive	Office Phys. Per Bed		Hospital PERSONS PER HOSPITAL BEDS
			General Practice	Medical Specialty	Surgical Specialty				BED	HOSPITAL BEDS	
US (199,226,600) .....	264,200	236,460	179,805	52,939	40,503	54,854	31,509	56,655	18,549		
A .....	765	840	1,110	3,700	5,000	3,700	6,250	3,700	7,150	4.3	5,886
B .....	131	119	91	27	20	27	16	27	14	254	789,791
West-North Central (16,150,000) .....	19,425	16,274	12,498	4,498	2,422	3,604	1,974	3,776	1,961		
A .....	833	990	1,280	3,580	6,670	4,550	8,350	4,360	8,350	6.3	787
B .....	120	101	78	28	15	22	12	23	12	207	78,810
Kansas (2,293,000) .....	2,476	2,103	1,647	633	280	452	282	456	221		
A .....	925	1,190	1,530	3,500	835	5,000	8,350	5,000	10,000	6.7	148
B .....	108	92	72	28	12	20	12	20	10	209	10,969
County Group 1 (324,800) ...	197	174	163	131	9	17	6	11	4	19	
A .....	1,550	1,850	1,960	2,500	33,000	20,000	50,000	33,000	100,000	10.1	55
B .....	61	54	51	40	3	5	2	3	1	197	1,646
County Group 2 (473,000) ...	331	287	275	177	30	57	11	12	12	32	
A .....	1,430	1,640	1,720	2,640	16,700	8,350	50,000	33,000	33,000	8.9	44
B .....	70	61	58	38	6	12	2	3	3	193	2,446
County Group 3 (877,450) ...	328	286	260	103	46	76	35	26	14		
A .....	1,080	1,320	1,450	3,700	8,380	5,000	11,100	14,300	25,000	8.2	26
B .....	88	76	69	27	12	20	9	7	4	177	2,126
County Group 4 (106,200) ...	114	101	95	22	18	35	20	6	5		
A .....	925	1,050	1,120	4,760	5,880	3,300	5,260	16,700	16,700	4.9	4
B .....	108	95	89	21	17	33	19	6	6	228	467
County Group 5 (64,600) ....	54	46	43	13	9	14	7	3	1	7	
A .....	1,190	1,410	1,490	5,000	6,670	4,550	10,000	20,000	50,000	5.1	2
B .....	84	71	67	20	15	22	10	5	2	292	221
County Group 6 (541,600) ...	758	648	489	102	112	158	117	159	77	33	
A .....	715	835	1,110	5,260	4,760	3,450	4,550	3,450	7,140	5.5	9
B .....	140	120	91	19	21	29	22	29	14	202	2,682
County Group 8 (405,500) ...	694	561	322	85	56	95	86	239	108	25	
A .....	585	725	1,270	4,760	7,140	4,360	4,760	1,700	3,710	4.3	8
B .....	171	138	79	21	14	23	21	59	27	294	1,381

A = person/M.D.  
B = M.D./100,000 persons.

TABLE 4  
KANSAS PHYSICIANS BY AGE AND PROFESSIONAL ACTIVITY—1970

	<i>Age Group</i>						
	BELOW 30	31-40	41-50	51-60	61-70	ABOVE 70	TOTAL
Full Time GP or Specialist .....	12	392	515	358	190	118	1,585
GP and Specialist .....	0	16	59	70	56	29	230
Intern .....	75	7	1	0	0	0	83
Resident .....	148	116	15	2	0	0	281
Other Full Time Hospital Staff ....	19	92	42	13	7	4	177
Full Time Medical School Faculty ..	2	35	37	17	7	0	98
Adm. Medicine .....	0	2	6	10	2	2	22
Lab. Medicine .....	0	0	0	0	0	0	0
Prev. Medicine .....	0	0	0	0	0	0	0
Research .....	0	4	6	2	0	0	12
Retired .....	0	0	0	2	8	54	64
Not in Practice .....	9	4	2	4	5	6	30
Total .....	265	668	683	478	275	213	2,582

3. Physician—needs

We project that Kansas 1980 physician requirements will be as noted in Table 1. Projected U. S. ratios are somewhat high since it is estimated that Kansas will lag behind the rest of the U. S. in population growth. The greatest need will be in primary care physicians. We believe there will be fewer solo practitioners and that groups of physicians will aggregate in clinics, adjacent to hospitals and along routes of high speed transportation linked together

by microwave or cable television communication. We project uniform medical records and laboratory procedures, which being computer based will facilitate inter-physician communication and reduce costly duplication of tests and procedures. Many procedures, such as history taking and laboratory procedures, will be more highly automated. The physician will be assisted by more allied health workers. It is difficult to project how, at any given date in the future, new systems of care will affect the numbers of types of physicians needed. This will require on-going study. Based on U. S. 1980 parity estimates, Kansas will need to acquire 1,352 physicians above present rates of acquisition.

4. Nursing

The status-1970 for nurses in Kansas is shown in Table 2. Kansas is deficient in licensed practical nurses. Although at U. S. parity with regard to registered nurses, we project markedly increased needs for nurses with advanced training to supplement physician manpower in many areas, urban as well as rural.

There are a total of 11,001 professional nurses currently registered through licensure in the State of Kansas as of February 1970. Of this total, 8,323 (75%) are actively engaged in the practice of nursing; whereas, 2,678 (25%) are not practicing their profession. The number of male nurses reported in 1966 was 81. The distribution of nurses by county is shown in Figure 8, displaying the same urban concentration as population, physicians and hospital facilities. The median age of the employed registered nurse in Kansas was 39.4 years; the national figure

TABLE 5  
PROFESSIONAL ACTIVITY—NURSES 1970

<i>Activity</i>	<i>Registered Nurses</i>	<i>Licensed Practical Nurses</i>
Hospital or Institution .....	5,569	1,809
School of Nursing .....	316	0
Private Duty .....	210	170
Public Health Nurse .....	299	12
School Nurse .....	344	0
Industrial Nurse .....	121	6
Office Nurse .....	783	116
Military .....	17	0
Nursing Home .....	458	294
Anesthetist .....	115	0
R.C. Blood Bank .....	25	0
Miscellaneous .....	66	9
Inactive .....	2,678	450
Total Registered Currently in Kansas .....	11,001	2,866



PHYSICIAN MIGRATION 1963-1970

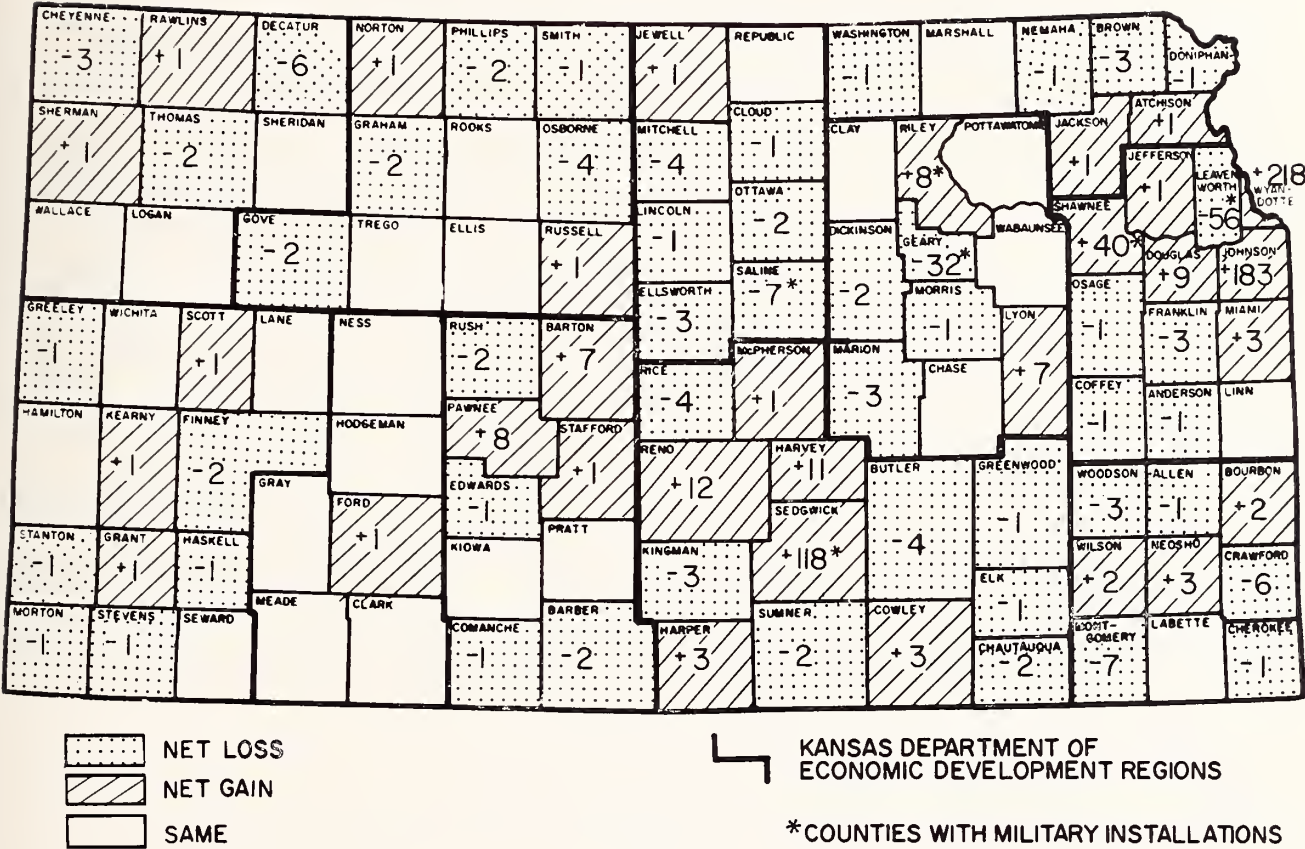


Figure 6

- ⊙ Hospitals (148 in state)
- Persons/Bed (209 state average)
- Hospital Beds (10,960 state total)

HOSPITAL BEDS - 1968

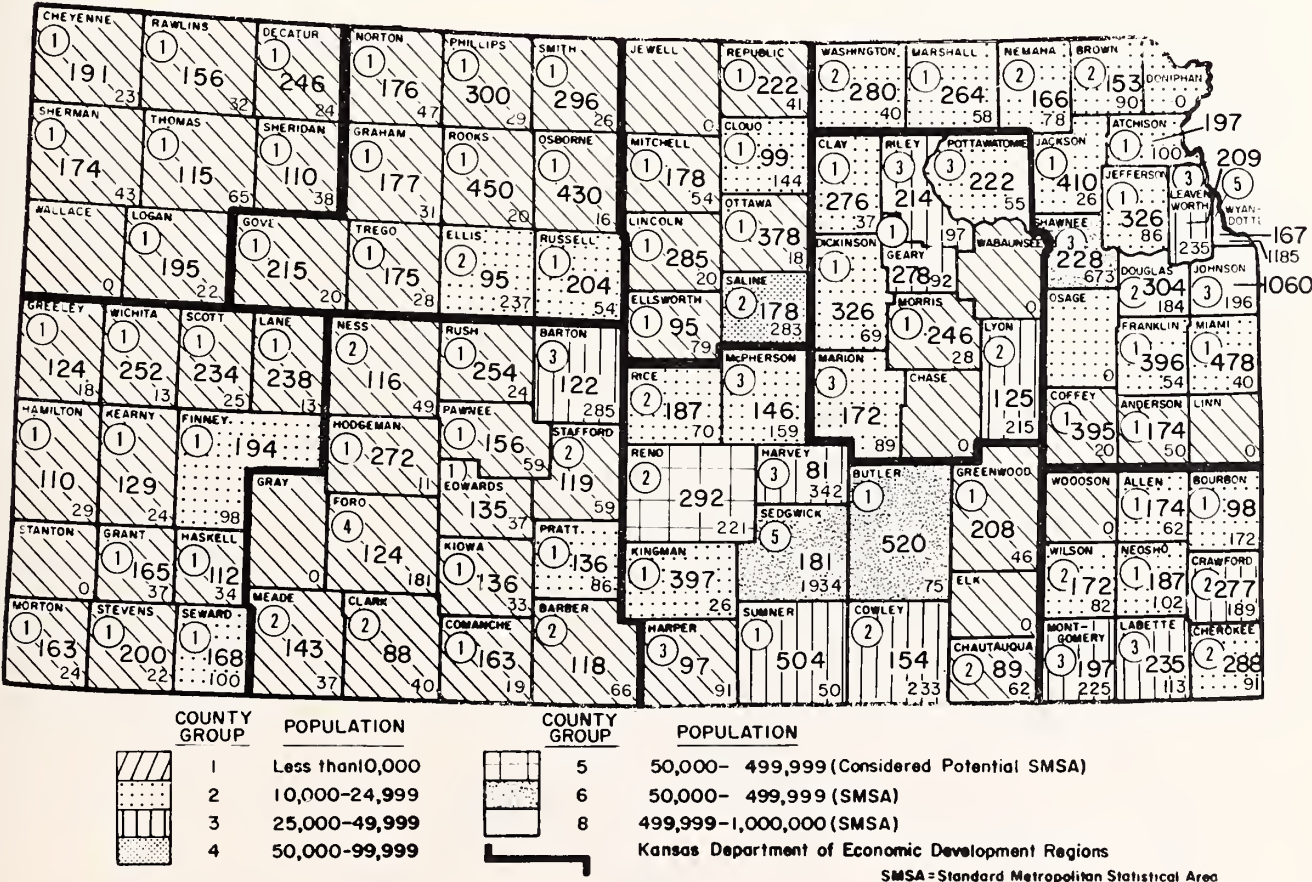


Figure 7



0 ACTIVE REGISTERED NURSES  
0 NURSES/OFFICE PHYSICIAN

## ACTIVE REGISTERED NURSES -1970

8323 TOTAL

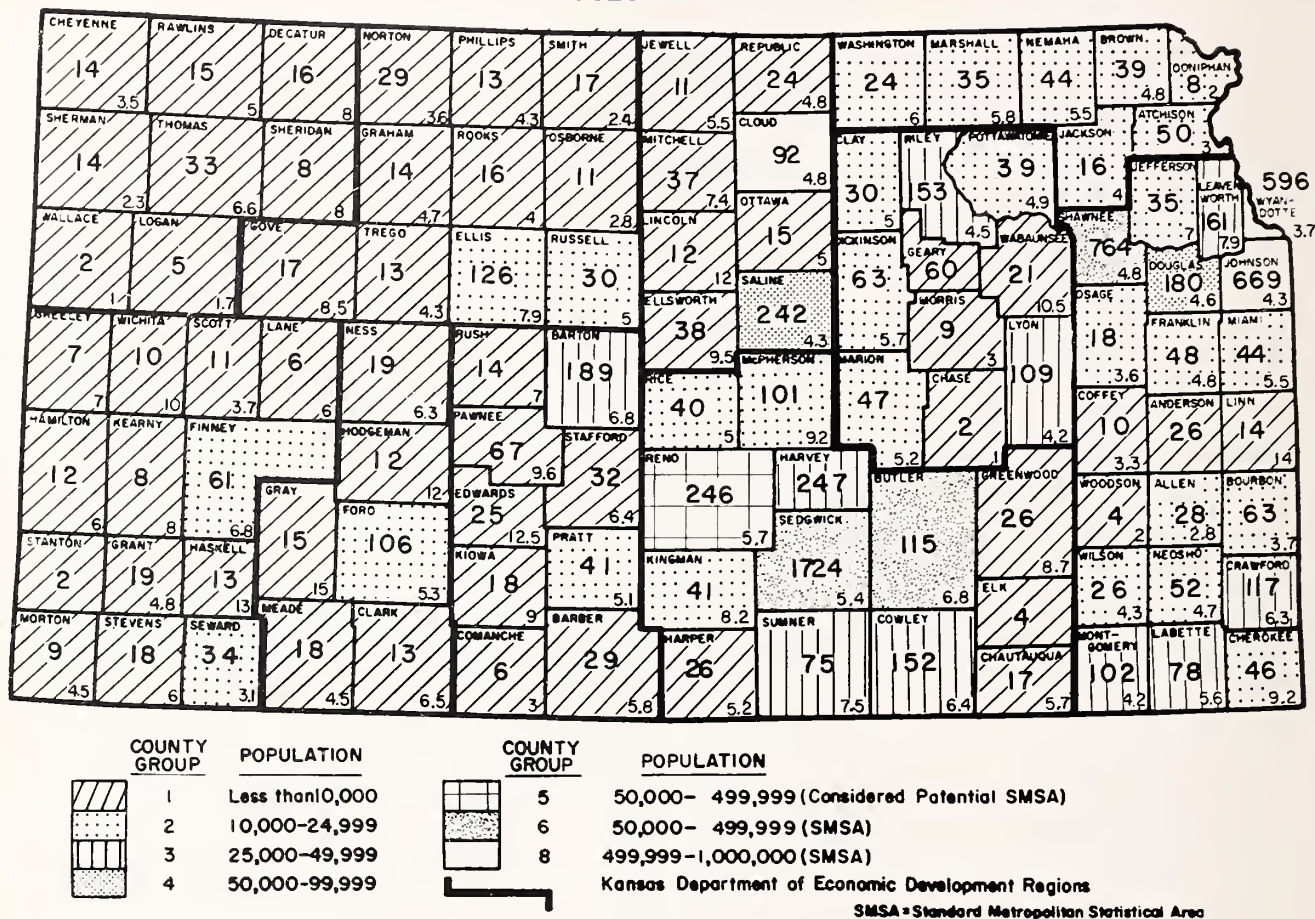


Figure 8

## ACTIVE LICENSED PRACTICAL NURSES-1970

2416 TOTAL

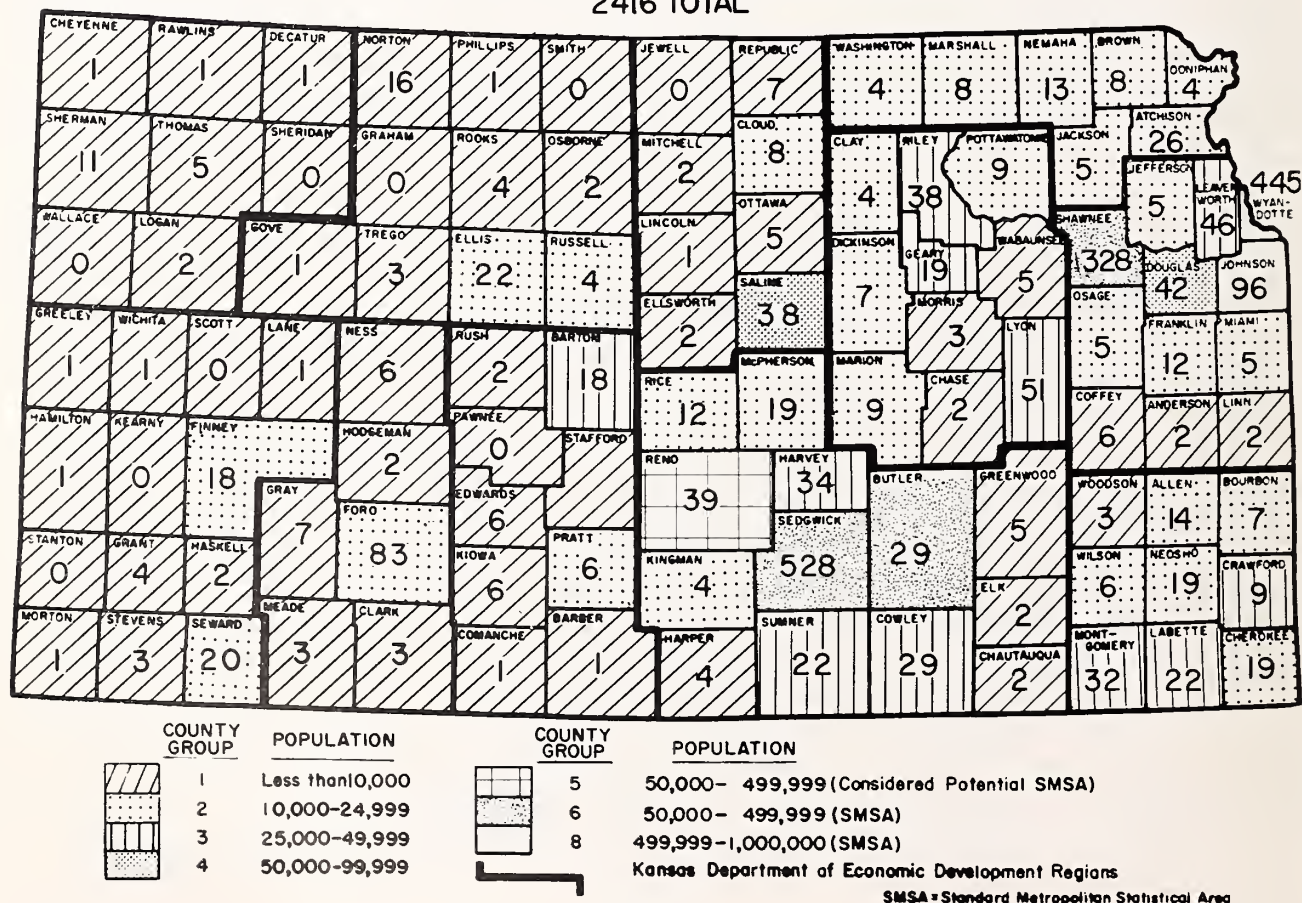


Figure 9



is 40.3 years. Those holding a degree in Kansas in 1970 numbered 1,901 (17%) as follows:

Associate Degree .....	86
Baccalaureate Degree .....	1,656
Master's Degree .....	153
Doctoral Degree .....	6

The majority of the nurses with degrees are employed in nursing education and public health nursing. Hospitals, nursing homes, industry and physicians' offices are staffed with diploma and practical nurses. In Kansas, 83 per cent of the nurses received their educational preparation in hospital schools of nursing. There are 2,875 practical nurses currently registered in Kansas (Figure 9). Four hundred fifty (16%) are reported inactive.

Every county of Kansas has a minimum of one inactive registered nurse except Cheyenne and Greeley counties, which have none inactive. It is interesting to note that 100 counties have less than 50 inactive nurses with a range of 2-48 and 9 counties have more than 50 inactive nurses with a range of 55-506. Thus, a potential of nurse manpower exists in all counties in Kansas if only they could be reinstated in the active work force of the health care system. Challenging and creative incentives must be provided to reactivate these nurses. Table 5 shows the distribution of registered and licensed practical nurses by professional activity. The registered nurse is engaged in a wide variety of activities while the licensed practical nurse confines her activities to patient care duties.

#### 5. Nursing Needs in Kansas

According to national norms, the number of active registered nurses in relation to population was 338/100,000; in Kansas, 370/100,000. The projected needs for employed registered nurses in Kansas by 1980 will be 9,630 of which 575 should be prepared at the graduate level. Since there are only 153 nurses with graduate master's degrees presently in Kansas, the most urgent issue in nursing is the development and expansion of graduate nursing education programs at both master's and doctoral levels. With the proliferation of baccalaureate and associate degree programs in the state there is a need for well-qualified faculty. In addition, in the complex health care system of today and tomorrow, leadership roles must be assumed by nurses who possess clinical nursing expertise, depth of knowledge in their chosen field and the ability to transfer their knowledge into nursing practice. Thus, primary nurse clinicians and master clinicians prepared for expanded roles in nursing will eventually have an impact upon the health care system in Kansas.

The State of Kansas should strive for a more equitable distribution of health personnel, decentralized regional health centers with adequate trans-

portation to these centers, differentiation of roles of health personnel, development of neighborhood health clinics in urban and rural areas, and support for advanced training for selected health personnel of the various demographic areas who will provide leadership in the restructuring and implementing of an innovative health care system. It is essential that doctors and nurses collaborate together with other health professionals in assessing health needs and implementing health care.

We thus project a need for increased production of registered nurses for expanded roles in education, public health and patient care. We also project an increased need for licensed practical nurses as a reflection of their increased responsibilities in patient care.

The numbers of inactive nurses has been noted, usually associated with family responsibilities. Retrieval of a proportion of these individuals could provide a rapid influx of experienced manpower. In counties deficient in physicians, additional training could fit inactive resident nurses for expanded responsibilities in primary health care delivery, in association with physician practice groups in larger towns.

Whether these new directions for nursing will increase or decrease demand for physician services cannot be foreseen at this time.

#### 6. Allied Health Professions

The period 1950-1970 has seen marked technological advance in medicine as in other sciences. There has been a significant rise in the level of sophistication of diagnostic and therapeutic techniques available to the physician and patient. This may be exemplified in Figure 10 and Figure 11, diagramming a comparison of medical care between 1930 and 1970. The increasing use of electronic, isotopic and a wide variety of physiochemical procedures has generated a substantial demand for allied health workers of advanced technical competence for important roles in intensive care, emergency care, isotopic diagnosis and the like.

An example is seen in renal dialysis, a procedure for life saving support of kidney function pending kidney transplantation. Who could have dreamed five years ago that a research procedure, renal transplantation, could become a treatment reality in 1970? The consequences and complexities of this program, outlined by courtesy of Dr. Donald Tucker, exemplify the magnitude of medical developments of this kind.

Renal dialysis, alone or in support of renal transplantation, is an effective means of prolonging the productive life of patients with end-stage kidney disease. Predictably, the introduction of a dramatic method of therapy into an otherwise unheralded discipline, such as Nephrology, creates a demand for

## HEALTH CARE SYSTEM -1930

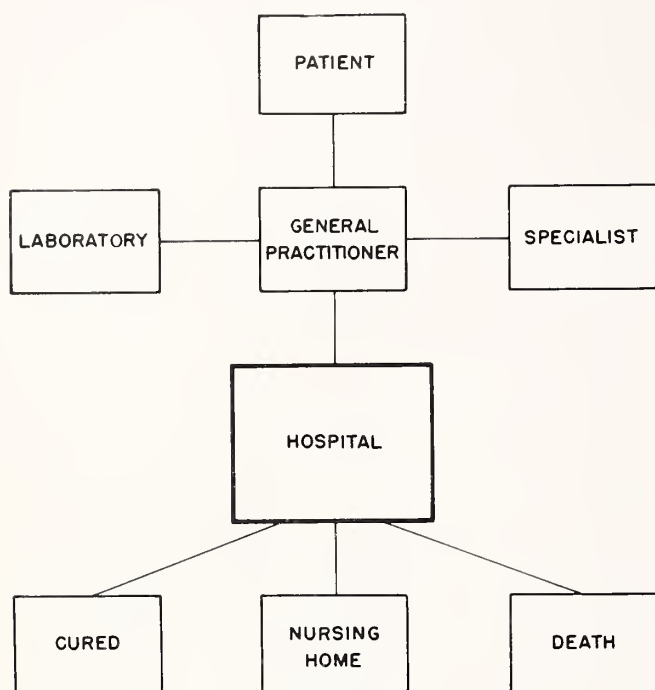


Figure 10

highly trained specialists far exceeding the available supply. In Kansas, the manpower shortage in Nephrology is probably even more acute than elsewhere in the nation. Prior to 1969, there was no formal mechanism for training students, interns, residents, nurses, and technicians in the principles of contemporary diagnosis and treatment of medical kidney diseases. As a result of this retarded entry into the Nephrology subspecialty area, the State of Kansas has no "backlog" of trained physicians or allied health personnel with which to implement a comprehensive program for dialysis and transplantation.

The dialysis and transplant facility at Kansas University Medical Center became operative only 19 months ago. It is expected that as the state's physicians become better acquainted with the treatment facilities in Kansas the case load will increase to equal the national average (7/100,000). The problem, then, is to train personnel and develop facilities to handle a reasonable portion of the expected case load within the State of Kansas. Clearly, the Kansas University Medical Center must assume a primary role in developing skilled physicians, nurses and paramedical personnel to meet the expected need, but cannot be expected to be the sole treatment source.

The nucleus for a training program now exists at the University of Kansas Medical Center in the Department of Medicine. In the past year, 12 patients entered the chronic hemodialysis program and five of

these successfully received kidney allografts at this institution by May 1970.

During the past 18 months, over 80 potential donors were evaluated in the Greater Kansas City area with 36 cadaveric donor and three living related transplants resulting. The cooperation among the participating hospitals in this program is excellent.

It is also important to note that the Kansas Legislature is preparing to support a growing program in Nephrology. In the recent legislative session, funds were appropriated (\$100,000) to provide financial assistance to patients requiring expensive hemodialysis and possibly transplantation. This is a significant step toward assuring future funding for innovative programs such as those described in this proposal. Following consultation with state leaders, there is reason to expect that the annual appropriation will be increased as the need increases. The State Department of Social Welfare, through Title XIX (Medicaid), has underwritten the cost of roughly 75 per cent of the patients in the Kansas University Dialysis-Transplant Program. Those funds will continue to be available to indigent patients. The State Legislature also has written into law a legal definition of death which should greatly facilitate procurement of donor kidneys.

Thus, the groundwork has been laid to provide good nephrologic care to Kansas residents. However, the serious shortage of trained personnel may severely retard delivery of care. Some steps to develop this manpower resource have been undertaken.

It has been estimated that as the program of renal dialysis and transplantation continues, during the tenth year (1980), 200 patients would be on dialysis awaiting transplantation (7/100,000).

- 195 surviving on dialysis
- 50 new patients emerging for treatment
- 40 transplanted with 85 per cent success rate
- 6 for retransplantation
- 24 deaths on dialysis
- 8 return to dialysis for late transplant failure.

If a Kansas resident does not have access to this program, he is in a 1930 system of medical care. Thus, highly trained technicians and other personnel are required. New educational programs must be devised as research programs of today become therapeutic realities of tomorrow.

We believe that new careers are already forcing changes in patterns of utilization of supporting health personnel. The development of emergency care technicians, intensive care technicians, patient care specialists, physicians' assistants, health educators, and biomedical computer experts open possibilities for new careers in health and for mobility between career programs allowing individuals to not



HEALTH CARE SYSTEM-1970

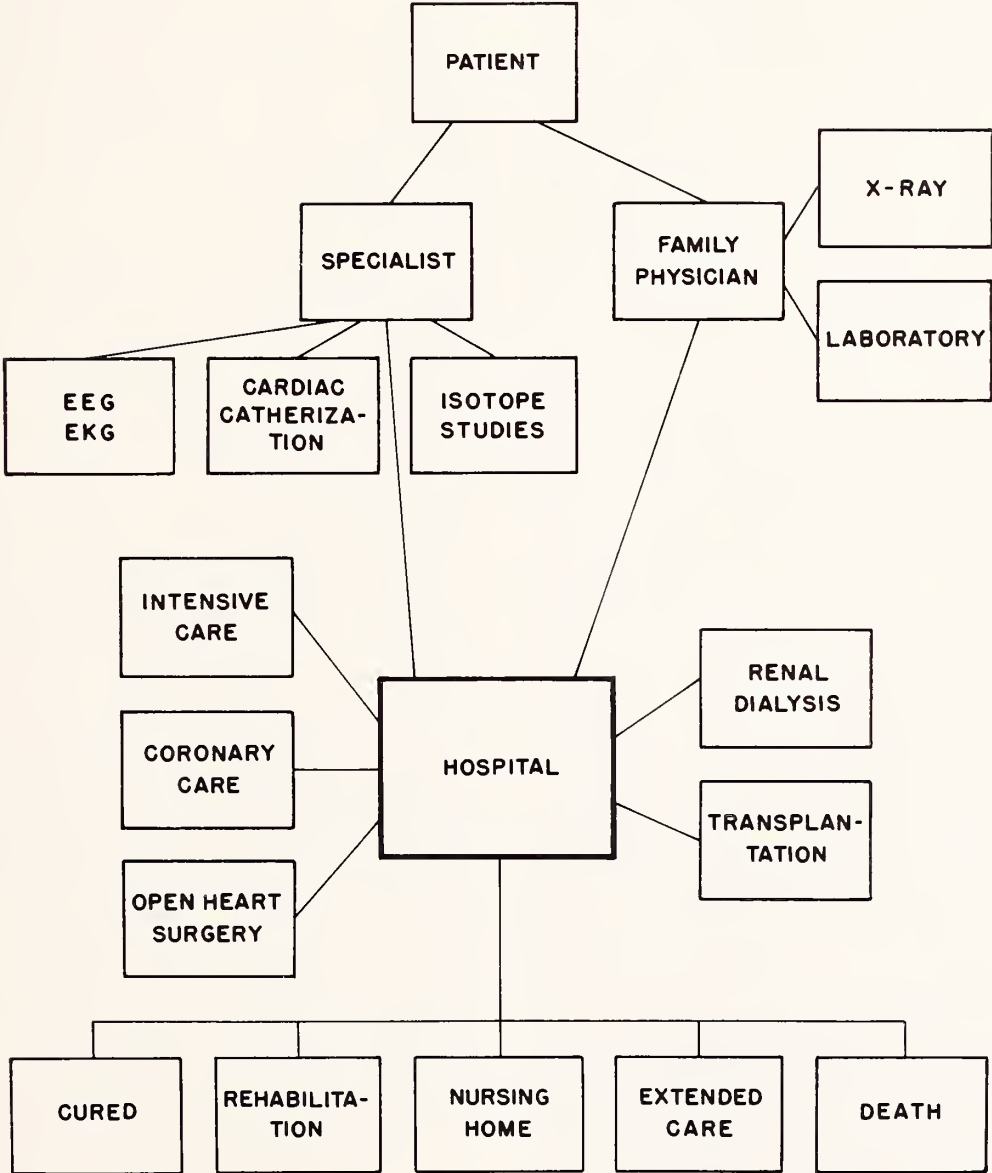


Figure 11

only move upward in their health professions but laterally as well. Utilization of these individuals will have a significant impact on the need for and distribution of physicians. Finally, allied health personnel tend to be located largely in facilities such as hospitals and clinics, where they provide implementation of the technology of modern medicine and patient care. We believe such individuals can also assist the physician in home care of patients and extend the physician's activities into new and broader areas of health care delivery, both rural and urban.

We project that in 1980 Kansas will require the

numbers of allied health personnel shown in Table 2. New careers will be in existence in a variety of patient care services such as emergency care, intensive care, cardiac technician, renal dialysis technician, health educator, physicians' assistants and home care specialists. We believe that the primary impetus for the distribution of these individuals will be the regionalization of facilities within the state under integrated planning for health care delivery in Kansas.

SYSTEMS OF HEALTH CARE

In 1970, as in 1930 and 1900, the physician for

practical purposes is the sole patient access point into our health care system. Health care is frequently referred to as "non-system" by persons implying that our health care structure has no overall design to serve society at large. This apparent lack of integrated design results from the highly personalized individual nature of health care between doctor and patient. Each physician has his own system of health care.

The impact of expanding knowledge and its necessary supporting technology on this base creates a general need for support services which have developed in parallel, unintegrated and sometimes redundant fashion. This structure requires reorganization of support and ancillary components to open new pathways of horizontal and vertical movement of patients between its component parts, eliminate unnecessary duplication of effort, and increase the access or entry points available to the patient seeking health care while maintaining the essential, personalized nature of individualized care.

We believe that the citizens of Kansas who gain access to a pathway of health care receive high quality care. We believe also that significant segments of our population are unable to enter our health care system because of transportation, economics, education and other factors. We believe these problems determining the availability of health care for the people are a matter of priorities for society as well as for the health professions. We believe that economics is rarely a determinant of where physicians locate, nor is altruism a usual determinant since physicians can achieve financial independence regardless of where they practice and can find a population to serve and who need them without reference to their location. Increasing the number of physicians will help alleviate some areas of deficiencies, but will not by itself put more physicians in the inner city or rural areas of this state. It is a personal and social responsibility of the people as well as the profession to provide the incentives that attract physicians to areas where society deems their supply insufficient.

Additionally, we believe that the various indices of health maintenance reflect primarily personal and public responsibility rather than professional competence. The leading causes of death in this country are heart disease, accidents, suicide, homicide, cancer, cirrhosis of the liver and infectious diseases. The known determinants of these health hazards relate far more to personal and social attitudes and behaviors than to professional medical practice. Excessive smoking, excessive alcohol consumption, obesity, sedentary life habits, stress, are determined by the individual's behavior, not by physicians. Over 50 per cent of all fatal automobile accidents are associated with at least one driver being intoxicated. Cirrhosis of the liver is determined in this country by excessive alcohol consumption in 80 to 90 per cent of

cases. Cigarette smoking, obesity, sedentary life styles and stress are the dominant known determinants of arteriosclerotic heart disease and as such the responsibility of the individual citizen to eliminate. Even in the less clear areas of cancer and infectious disease, individual responsibility is clear in the relationship of cigarette smoking to cancer of the lung, chronic bronchitis, emphysema and pneumonia; obesity to diabetes; and self examination and annual evaluation in the early detection of cancer of the breast, carcinoma of the cervix and other abnormalities.

Society at large must likewise deal collectively with the social determinants of accidents, suicide and homicide and with malnutrition, stress, environmental pollution, poverty, rodent infestation, urban wastage of human potential and other factors that contribute to morbidity and mortality of our citizens, child and adult. To use infant mortality as a measure of health care delivery alone, as is often done, is completely misleading. It is a combination of the many factors listed above. The health professions can provide guidance, expertise and manpower, but it is an individual, societal and legislative responsibility to eliminate these detriments to the health of our population.

The American public and the profession have accepted health care as a right, raising public and individual expectations for the delivery of health services. Rising educational levels, improved economic standards and a variety of federal programs to support the economically deprived also raise the expectations of our citizenry for health care services. Population shifts from the rural to urban areas and suburban migration force a change from solo physician practice in small, relatively self-contained communities towards practice in large metropolitan and suburban complexes with attendant diffusion of personal responsibility, "doctor shopping," and fragmentation of care. The development of Family Practice as a twentieth century medical specialty is a program to counter some of these effects of urbanization and technologic impact on individual physician-patient and physician-family relationships. Increasing use of expensive hospital facilities such as renal dialysis, intensive care units, cardiac catheterization, and cobalt therapy units raise public and professional expectation that these services will be available when needed. These services tend to aggregate in urban areas where existing facilities are already a major source of current financial problems. Another force for change in health care systems has been the impact of the third party insurance carriers and federal programs for prepayment of health care. All of these programs are fiscally open-ended and have been placed upon a system that is closed in its present capacity and unable to rapidly adapt to increasing demand. These programs by their payment regulations have promoted patient



hospitalization; none develop any incentive to treat ambulant patients outside the hospital. The advent of federal programs for Health Maintenance Organizations may be a step toward increasing incentives for ambulant care, as have Kaiser-Permanente type programs (Garfield).

Subregionalization of facilities and aggregation of physicians either in hospitals or closely adjacent to them should avoid reduplication of expensive equipment and personnel services. Traffic flows on the turnpike and interstate system likewise will influence the location of regional facilities providing emergency care for people suffering medical catastrophes. The Regional Medical Programs and Comprehensive Health Planning are additional federal-state programs currently developing plans to deal with these shifting patterns of health care delivery. Better coordination between planning agencies is needed for more efficient progress.

Research, both disease and health care oriented, will produce significant but unpredictable changes in our health care system just as the advent of antibiotics shifted health problems away from infectious disease. The probable advent of effective antiviral agents and consistent cancer prevention and management may significantly change health care patterns by 1980.

No group has been more diligent in imposing standards of performance and competence upon itself than the health profession. Medical and nursing school accreditation, residency review boards, medical specialty examinations including the new board of Family Practice, hospital accreditations, hospital staff regulations, tissue committees, utilization review committees, emergency room standards, and operating room standards are all examples of self-imposed methods by which the health profession seeks to maintain its own professional competence and provide the highest possible quality of medical care to the people.

The management of the quality of health care is now under intensive review by professional groups, hospitals and specialties in such developments as peer review, hospital utilization study and the idea of medical foundations to provide integrated, professionally based supervision of health care systems, planning, development and delivery. Public responsibility in these areas will require additional shifts in public expectations away from dependence upon the medical profession to treat disease towards public responsibility for prevention of disease through change of personal and societal attitudes and behaviors towards health determinants. Finally, new technology in computers, automation and communication are major forces leading to development of standardized medical records and formulation of a health data base. These should diminish expensive reduplication of effort by members of the health

care team, provide definitive and immediate information regarding a patient's health status, provide reliable, accurate and precise vital statistics to assist society in determining health care priorities, and provide for continual updating of professional education and education of the public in matters of health.

We project for 1980 accelerated shifts of physicians into practice groups with aggregation of technical and personal support facilities around these groups. A suggested regional model for urban and rural practice is shown in Figure 12.

The Family Practice Center or Medical Group assumes responsibility for a geographical area. Nurses, technicians and various assistants are available. These may be a regional Health Maintenance Center to which people may be referred for counseling, education in health maintenance procedures, etc. Primary care in small rural towns in the area is given by a nurse clinician or specially trained physician's assistant, in communication with the Practice group, possibly via television as well as telephone. Patients requiring supportive or specialist care would be referred to the Regional Hospital.

In the urban inner city, a similar system could be based on the Neighborhood Health Center with physician back-up by family practice units and outpatient departments of nearby hospitals.

Urban and Regional Area Hospitals will serve as Health Education Centers for medical, nursing, and allied health education and undergraduate and postgraduate levels.

The University Related Health Science Center and Medical School has educational and research responsibilities. It is important to realize that the rapid advance in medical care is the result of research—the research of today is the health care of tomorrow. To neglect this important function, as has been suggested in some quarters, would be disastrously shortsighted. The medical school also serves as a state resource for unusual and complicated treatments and procedures such as renal dialysis, transplantation, cardiac surgery, stereotaxic surgery, cancer chemotherapy, special radiological procedures and the like. These procedures require additional funding over that of ordinary operating expenses for special equipment and additional highly trained personnel needed.

We anticipate the developing Family Practice Programs will produce primary physicians who by integrating and coordinating the activities of a team of professionals may become a dominant influence on health care. New careers in health will open in emergency care, health education, computers and information management, all under professional supervision and all being utilized to release the physician's time to apply his long training and skills to the individualized management and direction of patients' total health care, not just the treatment of acute ill-

ness and catastrophic disease. We believe a standardized medical record will be in existence by 1980 allowing for rapid communication of a patient's health data between the physicians.

The development of such a health data base will require appropriate controls to protect the individual's personal security. Finally, we believe that the development of high speed mass transportation and the experience of the Armed Forces in development of evacuation procedures will produce a significant impact on the location and availability of health care manpower and facilities.

Many elements of such a regionalization system now exist in Kansas. Their further development will require the best efforts of the public and the professions.

For perceptive reviews of elements of these problems from physician and public viewpoint, the reader is referred to articles by Garfield and Austen.

Thus, it seems clear that Kansas, with its rural, suburban and urban areas, some of them impoverished, needs several different programs to achieve such improvements and also that these programs will require new educational programs, all of which should be developed in relation to the types of health service problems encountered.

Kansas lends itself to regionalization about the three metropolitan areas and a number of sub-metropolitan areas surrounding each of them. Through the interest of involved citizens, legislators, the Kansas Medical Society, Regional Medical Programs, Comprehensive Health Planning Agency, Kansas Nursing Association and Kansas Hospital Association, it would appear feasible to develop systems of health care delivery on a sub-regional basis. This will require identification of the points of entry of the patient into the health care system. It will also require education of the public to understand and accept the system. It will probably include certain routine diagnostic and surveillance procedures conducted by other than M.D. personnel. It will require a major emphasis on health education, not only in the school systems but for individual patients. It will require substantial efforts toward increasing the efficiency and decreasing the costs to bring adequate health and medical care within the reach of all citizens. It should be possible for any patient to move about in the health care system of Kansas according to his medical needs without repeated payments. Considerable innovation and experimentation should be undertaken and it is strongly urged that this be done before widespread schemes—such as national health insurance—are imposed on the already overburdened system. Kansas has a unique opportunity because of its people and its geography to lead the way in this area.

In addition to new systems of health care delivery, new programs are needed to educate and train health service personnel at all levels.

It is proposed that an office of health systems analysis be developed at the medical school to work cooperatively with the Kansas Medical Society, RMP and CHP and other health professions. It should be staffed by people skilled in systems analysis and health care delivery, to make authoritative studies of the geographical distribution of health care delivery systems, the type of personnel required, variations in rural and urban areas, patterns of referral, regional diagnostic laboratories, regional facilities for rehabilitation, public health, health education, systems of payment and reimbursement, systems of professional postgraduate education and new types of health care workers required for a more sufficient delivery of health care. Thus, there could be closer coordination between needs and education programs to meet them. This office should be responsible to the Vice Chancellor for Health Affairs.

#### COSTS AND FINANCING

Table 6 shows the rise of medical care prices compared to a consumer price index of 1955 to 1959 equal to 100. It is clear that hospital daily service charges have increased tenfold in the past 30 years. This increase relates to (1) the rising salary levels in this service industry where 70 per cent of operating budget is personnel cost, (2) inflation, (3) the impact of expensive technology and technicians, (4) the educational programs of our hospitals, (5) the influence of third party insurance and federal programs in promoting hospital inpatient services at the expense of ambulatory care. As an illustration, the current hospital daily costs at Kansas University Medical Center are approximately \$90 per day, but the portion that can be allocated to "hotel expenses" are but \$9.50 a day. The difference lies in the highly individualized personal and technical services provided to patients in this institution and the impact of technology and educational programs on hospital

TABLE 6  
STATUS 1970

<i>Year</i>	<i>Consumer Price Index</i>	<i>Medical Care</i>	<i>Total Physician Fees</i>	<i>Hospital Daily Service Charge</i>
1940	48.8	50.3	54.5	25.4
1950	83.8	73.4	76.0	57.8
1960	103.1	108.1	106.0	112.7
1969	127.6	155.2	155.5	253.8



economics. The outmoded 1970 physical facilities of the majority of our institutions for the delivery of 1970 health care is an additional economic burden for the hospital if it is to maintain, update and grow while maintaining fiscal soundness.

Society must recognize that for many years hospitals have been supporting medical and allied health education in the United States and in the State of Kansas through support of a broad spectrum of technical, undergraduate and graduate educational programs. The costs of the programs produce a surcharge to the patient's hospital bill which should be borne by society, not by the sick.

Professional services have traditionally developed on a fee-for-service basis. As seen in Table 6, professional services have tripled in the last 30 years but the rate of increase is only slightly greater than the total consumer price index increase. Once again the impact of third party carriers and federal health payment programs provide an influx of open-ended money into a closed supply system. The obvious economic consequence of this is to drive prices for service upward. Patients currently demand hospitalization in order to take economic advantage of their insurance programs. Such programs must be changed to provide proper incentives for outpatient management and to provide for health maintenance and disease and disability prevention.

We believe that by 1980 some form of universal prepaid health insurance plan will be in existence and that it will provide incentives for health maintenance and ambulatory care. We believe that cooperative ventures between the state and federal government will be in existence to pay the costs of medical education and to provide incentives for modernization of ideas, methods and facilities and to eliminate redundancies in medical care service while providing for individualization of health care delivery. These problems and projections will require reordering of national priorities by society at large utilizing the expertise of the health professions.

### Educational Objectives to 1980

Kansas needs more health professionals. The education of these individuals requires assumption of responsibility for funding of educational programs by the state in partnership with the federal government. As in other states, approximately 60 per cent of the M.D. graduates of the University of Kansas School of Medicine leave the state, thus Kansas is a resource for the nation in production of health manpower (Table 7). This factor should be clearly stated in the development of plans for federal-state partnership for health education. However, Kansas is a debtor state in that 60 per cent of its physicians are educated elsewhere (Table 7).

TABLE 7

<i>State</i>	<i>1970 Kansas Physicians Where They Went to School</i>	<i>1969 Where KU Grads Are</i>
Alabama .....	3	8
Alaska .....		4
Arizona .....		42
Arkansas .....	25	14
California .....	24	375
Colorado .....	25	97
Connecticut .....	7	12
Delaware .....		1
Florida .....		33
Georgia .....	9	9
Hawaii .....		11
Idaho .....		12
Illinois .....	170	44
Indiana .....	21	23
Iowa .....	40	35
Kansas .....	1,137	1,171
Kentucky .....	21	9
Louisiana .....	30	11
Maine .....		7
Maryland .....	11	23
Massachusetts .....	30	29
Michigan .....	29	34
Minnesota .....	19	58
Mississippi .....		2
Missouri .....	160	428
Montana .....		12
Nebraska .....	134	14
Nevada .....		7
N. Hampshire .....		
New Jersey .....		18
New Mexico .....		25
New York .....	58	35
N. Carolina .....	10	18
North Dakota .....		18
Ohio .....	33	43
Oklahoma .....	77	76
Oregon .....	4	41
Pennsylvania .....	51	19
Rhode Island .....		1
S. Carolina .....	2	4
South Dakota .....		8
Tennessee .....	47	8
Texas .....	49	116
Utah .....	5	8
Vermont .....	4	3
Virginia .....	14	19
Washington .....	3	66
W. Virginia .....		8
Wisconsin .....	33	21
Wyoming .....		14
Washington, D. C. ....	15	14
Other .....	277	63
Unknown .....		256

TABLE 8  
KUMC  
SUMMARY OF ENROLLMENT

	1964	1965	1966	1967	1968	1969	1970	1971	1972
Medicine									
Freshmen	111	113	126	127	127	125	131	130	130
Sophomores	101	102	111	120	123	129	126	131	130
Juniors	111	105	101	112	121	121	126	126	131
Seniors	99	112	100	103	114	122	124	126	126
	<u>422</u>	<u>432</u>	<u>438</u>	<u>462</u>	<u>485</u>	<u>497</u>	<u>507</u>	<u>513</u>	<u>517</u>
Nursing									
Third Year	59	83	78	68	66	99	51	50	50
Fourth Year	83	82	104	111	69	52	83	80	80
Fifth Year	—	—	—	—	16	44	55	75	75
Visiting Nurses	—	—	—	18	18	24	17	20	20
Practical Nurses	64	61	80	109	77	47	60	50	50
Occupational Therapy	15	14	9	12	15	22	0	0	0
Physical Therapy									
Degree	27	11	14	21	37	41	34	40	40
Certificate	6	8	9	9	8	9	9	10	10
Medical Technology									
Degree	8	6	9	6	10	0	12	10	10
Certificate	6	16	5	2	9	19	14	20	20
Inhalation Therapy (Two-Year Program)	0	0	0	0	6	20	25	30	30
Nurse Anesthetist	0	0	0	0	0	0	6	6	6
Radiologic Technology	16	19	19	25	24	23	27	25	25
Mortuary Science	5	7	5	3	3	0	0	0	0
Interns	21	27	24	22	24	46	32	33	35
Residents	147	152	151	166	164	152	160	165	165
Fellows	27	39	42	27	40	42	48	50	50
Trainees	4	0	2	2	12	12	7	15	15
Specials (Educ., College, etc.)	0	45	4	8	9	29	35	30	30
Graduate									
School of Social Welfare	0	0	0	0	0	62	62	62	62
Graduate Students	229	232	254	231	308	188	334	340	340
Other Students	0	0	35	32	47	32	17	25	25
Totals	<u>1,139</u>	<u>1,234</u>	<u>1,282</u>	<u>1,334</u>	<u>1,447</u>	<u>1,589</u>	<u>1,595</u>	<u>1,649</u>	<u>1,655</u>



Clearly, Kansas University Medical Center cannot assume responsibility for facilities, faculty and support of all needed programs, old and new. This is particularly true in the area of graduate medical training, where the evidence suggests that physicians are more likely to locate where they have had their postgraduate training such as internships and residencies. Any increase in class size at the medical school must be made in parallel with an increase of affiliated graduate educational programs with the clear responsibility and commitment of the state to fiscally support these activities.

Kansas University School of Medicine has educated 4,153 medical students, 1,979 nurses and over 2,000 allied health students. Enrollment data is shown in Table 8.

### 1. Physicians

The development of new systems of health maintenance and medical care during the next decade will unquestionably alter the quantitative and qualitative needs for health professionals; however, a net increase in numbers of health professionals will be needed as summarized in Tables 1 and 2. All currently proposed schemes of new health care systems call for increased participation of non-M.D. workers in all phases of health maintenance and medical care. Educational programs will be needed for new, developing careers as well as augmentation of the personnel output of existing programs.

Since the physician remains the predominant entry point for patients into the medical care system, the number and distribution of physicians is of pre-eminent importance. Kansas needs more physicians (1) to eliminate manpower deficits, (2) for population growth and (3) for replenishment of current manpower losses from death, migration, etc. For example, of 1970 Kansas M.D.'s, 94 (2.4%) are inactive or retired, 488 (18.9%) are 60 years or more old and 478 (18.5%) are 50-60 years old. Thus, 30 per cent of our present physicians will be at or near retirement age by 1980. The net migration of physicians between 1963-70 is shown by county in Figure 6. Population mobility in our present society suggests that such migration will continue or increase. Table 1 presents needs for growth and deficit removal and does not account for any loss from our present deficient manpower base. How changing patterns of health care will affect these projections is unknown; the only certainty is that they will be changed.

The educational recommendations by a 1969 Faculty Committee on Health Care Systems appropriately summarizes some of the problems and objectives of medical education for Kansas as follows: [( ) are author's additions]

The committee feels that an expanded role for the university in medical education is not only proper but urgently needed. It is our opinion that the delivery of medical care, and the shortage of health personnel can be significantly improved by the educational impact of the university working in concert with other interested parties in the state. These efforts are most likely to be successful if channeled through regional centers in which health facilities and personnel are centralized, preferably in relation to community hospitals of 200 beds or more. This regionalization and centralization is already taking place. We should facilitate it by the means at our disposal and by our leadership. The objective should be to create "centers of excellence" by stimulating the development of a true environment for learning at all levels. To this end the following specific recommendations are made:

1. The preceptorship program should be redirected so that the student's experience is in a group practice related to one of the developing centers (as well as with physicians of smaller communities).

The preceptorship is an extremely valuable educational experience. However, if it is to accomplish the objective of allowing the student to relate his basic education to the practicalities of medical practice, it should expose him to the type of practice he is likely to enter upon completion of training. Solo rural practice does not represent this kind of an experience. From an educational standpoint, for recruitment purposes, and in terms of its impact on the quality of practice at the local level, there are many advantages to establishing the preceptorships in community medical centers.

2. Residency programs in all major specialties should be developed wherever possible in regional centers in affiliation with those at the university. Additional full-time faculty at the local center must be recruited.

It has been well demonstrated that physicians tend to practice where they take their residency training. Therefore, from a recruitment standpoint, establishment of residency programs in community medical centers is the single act most likely to improve the doctor shortage. The advantages which a residency program brings to the educational environment of a local center are obvious. With adequate financial support from state and local sources, and local faculty (with university appointments) it can be a highly satisfactory educational experience as well. Without university support, these kinds of programs are not likely to develop.

3. Education programs for allied health personnel must be expanded and strengthened, both at KUMC, Wichita, and at the local level in regional centers and junior colleges.

The roles of nonphysician health personnel seem destined to expand, and the need for more specially trained professionals and technical personnel is steadily increasing. We must take the lead in developing new types of personnel and changing the roles of present personnel as necessary. As the major

medical educational resource of the state, it is our responsibility to stimulate the development of this kind of training in the community by means of affiliation programs and by training of faculty for these kinds of programs. Furthermore, physicians must be given specific training in effective utilization of allied health personnel.

4. Continuing education programs must be radically redesigned. They should be centered about, and part of the daily routine of, medical practice at the local community centers. They must involve all health personnel, not just physicians and nurses.

Effective education requires participation and involvement of the student. The visiting lectureship is of very limited value—especially when not related to the concerns of the physician. A program of conferences, rounds, case discussions, etc., at the local level offers the best opportunity for meaningful continuing education while also providing the forum for stimulation and mutual education that medical students and residents bring to a program.

Peer association such as is possible with greater centralization and institutionalization of health practices offers a richer intellectual environment, greater consciousness of the need for competence, greater ease of learning, and greater potential for career satisfaction. This same environment offers greater ease of effective cooperative teaching from the outside as well as on-the-job self-education.

5. These educational efforts must not be by the university alone, but require active, aggressive cooperation between all elements of organized medicine, governmental agencies, professional organizations, voluntary health organizations, and our school of medicine.

The curriculum developments outlined and the development of affiliated programs and a Department of Family Practice have been accelerated by the "Package Legislation" of 1970 which provided developmental funding and a commitment for continuing support for these programs. These areas and planning for enrollment increase, the fourth element of the package, are being developed as rapidly as time and personnel make possible. To assist the institution in developments for enrollment increase we have submitted a request for federal support to fund faculty positions at KUMC and in affiliated hospitals and leasing of facilities for basic science instruction for the first five years of such a program.

As rapidly as the local situations develop in Wichita, Topeka, Kansas City, Kansas, and elsewhere, we will press for house staff and student programs in these areas. We now support portions of the salaries of the local educational coordinators from "Package" funds as well as house staff and new house staff positions in each location. Further funding support for these graduate educational programs for interns, residents and faculty have been requested from the state (as part of the "Package") and the federal government.

These plans for undergraduate and graduate educational programs are consistent with the Special Report of the Carnegie Commission on Higher Education, October 1970 and the Proposal for a Bicentennial Program for the Expansion of Medical Education of the American Association of Medical Colleges (AAMC), September 1970. We concur with the reports in their recommendations that the costs of medical education programs should be partially funded by federal grants based on educational costs per student. We are developing an educational cost analysis for this institution so that we can clearly define the price of medical education. Preliminary estimates from this study indicate that the \$9,000/student suggested in the AAMC report is a reasonable first approximation. We believe state-federal sharing developed on a reasonable formula is proper. For example, approximately 60 per cent of the graduates of the K.U. School of Medicine leave the state to practice elsewhere, suggesting a 60-40 federal-state sharing of educational costs as appropriate. Clearly, the production of health professionals is a national asset and responsibility and should be shared directly by the federal government.

Medical schools can no longer be expected to live from year to year in a hand-to-mouth fiscal environment made uncertain by changing federal priorities. The development of patchwork medical centers and programs, of which this institution in some respects is an example, is the result of these changing programs and availability of funds rather than to a clear policy of educational program development based on a national and state priority for health care delivery.

In the September 1970 issue of the *Journal of Medical Education*, Dean Cheves McC. Smythe reported the results of a 1965-67 survey of six academic departments in 25 U. S. medical schools. The report presents in detail the fiscal support, space allocations, educational efforts and research and graduate programs for these institutions.

These data provide clear evidence that, compared to the other 24 schools surveyed, Kansas has been operating in restricted space with faculty deficits while producing 40 to 50 per cent more M.D. graduates than the average of the other schools.

In order to reach an estimate of the educational program size and facilities necessary to meet 1980 needs, predictions of class size are essential. The following four generators have been utilized based on 1970 data:

1. Openings per 1,000 baccalaureate degrees. U. S. Index = 22. Kansas should have 240 first year positions.
2. Openings per 100,000 population. U. S. Index = 11. Kansas should have 248 first year positions.
3. Openings per 10,000 young persons. U. S. Index = 39. Kansas should have 160 first year positions (and more young people, apparently).



4. Replacement needs for some portion of the 2,488 presently active physicians.

<i>Attrition Factor For 3,840 Physicians in 1980</i>			
Population Growth	.6%	23	Estimate
Death and Retirement			
300/10 years	1.2%	46	RMP data
Moving and New Careers	1.0%	38	Estimate
Reeducation	1.0%	38	Estimate
New Programs	1.0%	38	Estimate
Kansas Deficit			
1,352/10 years		135	Table 1
		—	
		318	

These generators plus increasing applications for admission suggest the need for enrollment increase to 200.

By 1970, Kansas had graduated 4,153 medical students. Of the 3,427 living in 1969, the location of those known is given in Table 7. Kansas retained 1,171 and Missouri 428. It is of interest that approximately 322 of the 980 physicians in the Kansas City, Missouri, area are from KUMC.

Since 1961, medical student enrollment at KUMC has increased from 92 to 131 per class, a 42 per cent increase. This increase has been accomplished without any significant increase in either basic science or clinical facilities. The present basic science facilities, already taxed to a maximum, are not of sufficient size to accommodate any enrollment increase nor are these facilities readily adaptable to new instructional techniques. Likewise, the clinical facilities are so outmoded and dispersed that the teaching-learning environment for instruction of students in modern medicine and health care is considerably constrained. Further, there are not enough beds and outpatient facilities to accommodate more students.

Despite these tangible obstacles, the faculty has proceeded to develop an innovative curriculum which, when fully implemented, will shorten medical school time to three calendar years. The first phase of this new curriculum was implemented in July 1970 and provides for career planning through an elective program and advisory system for our students. Lack of clinical facilities and faculty necessitates that 25 per cent of students be on free time throughout the year so that acceleration is not yet possible for the entire class. The full plan will be implemented in July 1971 so that a doubled class of 250 students will be graduated in 1974. This one-time increase of 125 students alone is equivalent to 25 students a year for five years, a common figure for new medical schools starting up. The new curriculum provides for a modular educational system in which the first eight modules (48 weeks) are in the basic sciences combined with an introduction to clinical medicine. We believe that early introduction to clinical medicine during the basic science year is a critical educational re-

quirement. We do not favor separate basic science and clinical training. The next 16 modules (96 weeks) provide for required clinical experience in medicine, surgery, pediatrics, psychiatry and obstetrics-gynecology, two required basic science modules and the remaining nine modules being in electives of the student's choice.

We believe that an immediate increase in manpower can be most quickly and efficiently achieved by facility expansion at the KU Medical Center. We have therefore proposed the necessary increase in basic science and clinical facilities to accommodate an enrollment increase to 200 medical students per class by 1973. Significant numbers of students in clinical training will need to be accommodated in the affiliation programs. Application for federal support of needed additional faculty at KUMC and in the affiliated programs has been made. It is suggested that in 1975, reassessment of needs be made based on continuing study. If further expansion of medical manpower training is needed, a decision should be made for further expansion at KUMC or establishment of a second school in Wichita.

Expansion of the class size at KUMC, coupled with development of affiliated academic programs in Wichita, Topeka, Kansas City and elsewhere provides a sound basis for a statewide health education program. Development of affiliated programs will require strong local commitment to medical education, firm state fiscal commitment and sound academic support and association. We believe development of strong, academic, community affiliates is essential to meeting the manpower projection of this program.

Medical educators recognize the essential contribution of sound graduate training programs to undergraduate medical education. Presently, 102 internships and 454 residency positions (including 143 in psychiatry at the Menninger Foundation) are offered in Kansas. Since no new internship positions will receive AMA approval after 1975, the internship will by that time, be fully integrated into the residency programs of the various specialties. We believe a graduate educational experience should be available for every KU medical graduate so that 600 would be required by 1976 and possibly 750 by 1981 to accommodate the proposed enrollment increase. Evidence suggests that physicians will likely practice in the general geographic area where they took their graduate training. Thus, expanded and strengthened graduate programs may substantially increase the retention of well-trained physicians in the state—a most important aspect of the affiliation program as developing under the "Package" legislation. Approximately 60 per cent of Kansas graduates leave the state to establish their practice and, conversely, Kansas imports medical professionals from other states. Data is presented in Table 7 and Figure 6 showing

the 1969-70 status of manpower migration for the state. Obviously, we import 60 per cent of our physicians from other states and the reasons they come to Kansas vary, but superior graduate programs and modern support facilities in appropriate population centers must certainly be an important factor in attracting out-of-state physicians.

The greatest qualitative physician need is for primary physicians in family practice, general internal medicine, pediatrics and obstetrics and gynecology. Table 1 suggests that based on national parity Kansas also needs support physicians in radiology and pathology. Residency training programs in all these areas of special endeavor need to be expanded and strengthened both at KUMC and in affiliated institutions as rapidly as possible. Particularly, the Family Practice program in Wichita and the development of a Department of Family Practice at KUMC and elsewhere need immediate and continuing support.

2. Nurses

In accordance with the Position Paper issued by the ANA, nursing educational programs are being developed within the educational system (institutions) of the country as community-based programs in order to meet the health needs of the community. As of July 1, 1970, the number and types of educational programs for nurses in Kansas were as follows:

Master's and Doctoral Degree Programs ..	1
Baccalaureate Degree Programs .....	4 + (2)*
Hospital Diploma .....	14 - (3)†
Associate Degree .....	4 + (2)*
Practical Nurse .....	11 + (1)*

The evident trend in education today is toward higher education either in the community colleges or the established universities. It is predicted that the national norm of level of education in the near future will be a minimum of two years of college. As more baccalaureate and associate degree programs in nursing are developed an increase in enrollment in these programs is inevitable. Table 9 indicates this trend during the past five years.

Curricula of both the undergraduate and graduate programs in nursing have been undergoing drastic revision with emphasis upon the community health model rather than the institutional (hospital) model. Greater emphasis is being placed upon flexibility, broader selection of electives, integration of the arts and science component with the professional component, independent study and freedom to become involved in health care away from the mother university in satellite and peripheral areas.

- Baccalaureate programs are providing
- clinical experience for students in both urban med-

\* Developing  
† Closing

TABLE 9  
NUMBER OF APPLICANTS ADMITTED TO  
PROFESSIONAL SCHOOLS OF NURSING  
IN KANSAS

1965-1969

Type of Nursing Program	Number of Applicants Admitted by Year				
	1965	1966	1967	1968	1969
Baccalaureate Degree ..	99	108	102	105	143
Associate Degree .....	0	10	13	37	95
Diploma .....	596	530	481	379	409
Total .....	695	648	596	521	647

- ical center and in rural small community hospital and community agencies.
- preceptorships with regional public health nurses serving several counties.
  - nursing electives which allow for greater depth of knowledge in a variety of nursing specialty areas.
  - knowledge and practice in physical diagnosis, screening, triage, family health counseling and teaching and emergency care, etc. allowing the nurse to provide primary health care.
  - emphasis upon wellness promotion of health and prevention of illness.

Graduate programs are providing

- in-depth study and practice as a generalist or as a clinical specialist in a chosen field of nursing.
- the necessary course of study in communications skills (programmed instruction, audio-visual techniques, computer science, etc.) to promote the master-teacher concept.
- the community as a laboratory, both urban and rural, to enhance continuity of care and to emphasize the environmental factors conducive to wellness and prevention of disease.

Table 2 presents the status of nursing and allied health manpower at present and as projected to 1980 based again on national parity. Although the present supply of registered nurses in Kansas is at a greater nurse/population ratio than the national average, it is clear from Figure 4 that the people of Kansas perceive a pre-eminent need for more nurses in all regions of the state. In addition to more nurses providing traditional nursing services, we believe needs are developing for more graduate programs for nurses, leading to careers in administration and education. New professional activities are likewise developing for nurses as nurse clinicians, physician assistants and patient care specialists wherein they will carry out activities now provided by physicians. Such roles will increase the access points for patients into the health care system and alter the demands on physician time—both of these changes import on the total demand for health services and manpower as



HEALTH CARE SYSTEMS-1980

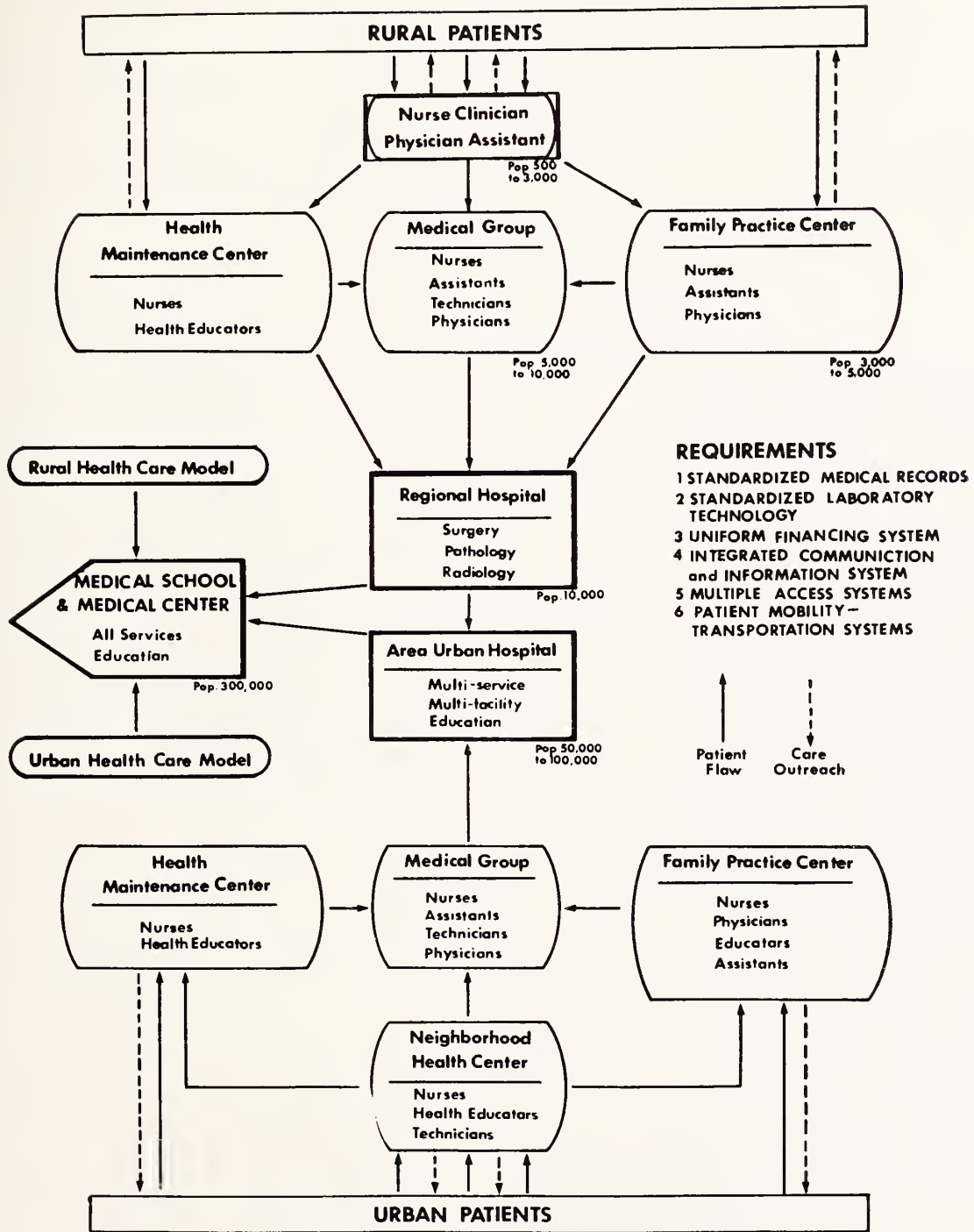


Figure 12

outlined in Figure 12. Expansion of educational programs in these and other areas should be a responsibility of University Related Health Education Centers.

The projected increase in need for licensed practical nurses reflects their increasing role in delivery of bedside patient care as a part of an integrated health and medical care team. Educational programs for this professional activity should be a responsibility of community hospitals in conjunction with health ed-

ucation centers and the state junior college system.

Allied Health

It is strongly recommended that a central agency be established for implementation of the Allied Health Education Program in this state. To increase the effectiveness of this concept the scope of the "Allied" or "Health Related" field should be defined in order to determine what programs would be included. While there are shortages in several cate-

gories of health related workers, an uncontrolled proliferation of programs to train such personnel in community colleges or other state institutions located in areas without adequate clinical facilities to complete the educational experience is not fiscally or academically sound and should be discouraged. Through the establishment of a single responsible institution (preferably in an urban setting) for the health professions, a consortium of community- and church-related colleges could provide jointly developed pre-clinical academic courses, after which the student would transfer to a supervised area for his clinical training. This plan would effect a substantial reduction in cost per student credit hour and, at the same time, greatly reduce the number of clinical faculty required (and in very short supply).

Other allied health professional needs are projected in Table 2. Programs for these areas should be dispersed throughout the state higher educational system and community hospitals as described for licensed practical nurses.

We believe that changing patterns of health and medical care delivery are leading to new careers for young persons in the next decade. Physician assistant programs are now in existence in medical schools and a nurse clinician program exists at KUMC. These career opportunities need support and development to expand the access and availability for health care to population groups not now adequately served as in rural and urban inner city areas. Working under the supervision of a physician, with independent responsibilities, these skilled, highly motivated young persons should provide increased service, skills and patient mobility for individuals in our health system. Other new careers include emergency care technicians, intensive care technicians, biomedical technicians and engineers, environmental technicians and engineers and others. The University Related Health Center should take the lead in exploring and developing broadly based programs to attract and retain young people into these areas of medical service.

The development of these career programs should be so structured that upward and lateral mobility is possible for motivated and capable students. This prospect is of particular importance to young people from minority groups who do not now perceive that health career opportunities exist for them. Provided that upward advancement is possible through the educational system, we believe that programs that create a real possibility for personal achievement and service while retaining open-ended access through R.N. and M.D. attainment is the real way minority group students can be convinced that they should serve their communities' health problems. Illustrative projections for five such careers are given in Table 2.

## Recommendations

1. Increase medical school class size to 200 students at KUMC.
2. Develop affiliations as rapidly as possible in Wichita and Topeka at graduate and undergraduate levels.
3. Increase production of nurses at Master's level for roles in education, advanced patient care and public health.
4. Increase production of allied health workers in conjunction with community colleges and hospitals throughout the state, including development of new categories of health care assistants.
5. Name or establish a central agency to coordinate the planning, implementation and accreditation of health education programs in Kansas. This is necessary to set proper standards, ensure quality and reduce unnecessary duplication and inappropriate programming.
6. Establish an office of systems analysis at KUMC to cooperate with Comprehensive Health Planning, Regional Medical Programs, and professional health organization in planning needed changes in health care delivery, education, financing, and quality control.
7. Establish a Health Education Facilities Authority which could build the necessary facilities for health education programs.
8. Expand the cost allocation study now in progress at KUMC to identify costs of education separately from those of patient care.
9. Remove the costs of education from hospital expense.
10. Develop a program of financing health education (Federal and State) according to formulae developed by the cost allocation study (8).
11. Accelerate physician education by shortening both premedical and residency training requirements to three years each, reducing physician education, thereby, from twelve years to nine. This minimum could be optionally expanded.
12. Accelerate training of nurses and reduce the number of different types of RN programs now in effect. Increase nursing programs for advanced health care and educational roles.
13. Increase manpower production in all health careers from minority groups.

## ACKNOWLEDGEMENTS

Dr. Robert Manning, Associate Dean—statistics and report compilation; Dr. Kermit Krantz; Dr. Jack Walker; Dr. Martha Pitel; Dr. Robert Brown for permission to use Kansas Regional Medical Program data; Mrs. Norma Sattem, Kansas Comprehensive Health Planning Agency.

EDITOR'S NOTE: References may be obtained by writing the JOURNAL, 1300 Topeka Avenue, Topeka, Kansas 66612.



## *The President's Message*

DEAR DOCTOR:

One of the privileges of my position is the opportunity to visit each district in the state. I have completed all of the councilor district meetings in addition to meeting with our new student society at K.U.

I want to take this method of expressing my appreciation to all of you for the very gracious hospitality which you showed me, my wife and the president and the president-elect of the Woman's Auxiliary during our meetings. The councilor and officers of your district or of your society planned excellent meeting facilities. It was a pleasure to visit with those of you whom I could prior to the meeting and I hope my remarks served to acquaint you more with some of the activities of your Society.

After completing all the district meetings and visiting with you and discussing some of our problems, I am more convinced than ever that the Kansas physicians are a conscientious and dedicated group of individuals. We all are busy, trying to do our best to provide quality health care to the people of our state. Because of the preoccupation with practicing medicine we tend to relax some of our concerns about the delivery of health care in all its aspects.

One of the obligations of your current officers is to keep the membership informed about the various aspects affecting the ways in which we practice. I have tried and will continue to try to meet this obligation.

For your graciousness, courtesy, interest, hard work and cooperation I thank each of you.

Sincerely,

*Frank J. Collins*  
President





## *The Feenix*

The physician's fee has been a problem presumably since the first member of the world's oldest profession consulted the first member of the world's second oldest profession and found him reluctant to take his fee out in trade. In the ensuing years, one might think a lasting solution could have been reached, but the persistence of the problem is noted as recently as the latest AMA meeting when the House of Delegates approved a report from the Judicial Council calling for physicians to reaffirm the concept of service primary and remuneration secondary.

The Council, in its recommendation, cites examples of physicians' business methods which have brought criticism on the profession: percentage increase in the fee for delayed payment; refusal of service in the face of an unpaid account; refusal of service in the face of an unsatisfactory credit rating, and the like. The contention that such practices enhance the public's negative opinion of the profession as a whole cannot be faulted. Such situations are yeast in the dough of public discontent. At the same time, the physician must, of necessity, rely upon sound and sometimes impersonal business methods as much as any other business man if he wants to keep his office functioning. His problem, then, is how to maintain an objective commercial enterprise and a subjective service effort at the same time.

The concept of charging a higher fee to the patient who can afford it and little or nothing to the indigent is virtually dead. The philosophy of the day is that the item of service determines the fee, regardless of the status of the recipient. With his change comes the distasteful acceptance of fee schedules, third, fourth or fifth parties, paper work, the extra time and effort of defending special charges,

and so on. But the profession will be hard put to prove to the public that it is not as well off financially under such a system. If the physician's prime concern seems to be the collection of his fee, patients as a group may not be wholly satisfied with the resulting system, but they will be disinterested in joining with the profession in any concerted effort to prevent the change.

In the face of the present upheaval in medical economics, it is difficult to remember that the really decisive element in the physician's successful function is his professional attitude. The "I-couldn't-agree-with-you-more" approach is a fine safety valve for Doctors' Lounge discussions of the government, public, labor unions, Congress, and other generalized groups so beloved for spleen-venting. But the physician's most effective forum is the consultation room where the character of his service will establish the patient as his advocate or adversary in the public arena. If he functions well in his personal professional relationships, the business side of his practice will be easier to manage. A reputation for sincere consideration of the patient will neutralize the occasional criticism that comes to any of us.

Many will think this a hopelessly naive attitude. How can one contend with increasing intrusions by government agencies, restrictions and "guidelines" imposed by outsiders, harassment by those having no understanding of the problems, and still say we must give first thought to the patient's welfare? The real agony of the problem today is not that it will produce some lethal mutation in medical practice as we know it, but that it diverts the physician's energies and interest away from the patient and into the very struggle that degrades him in the public eye.

No worthy physician subscribes to a "public be



damned" attitude. He must remember that the benefits deriving from a patient-oriented approach are largely intangible but contribute to credit in the moral bank which will sustain him during critical onslaughts. There is much publicity given to the concept that the public dislikes the medical profession. Many columnists and news analysts could not survive without that theme to exploit. Why, then, are physicians in such great demand? Why do countless people hold their personal medical advisers in high esteem? Why are more young people seeking admission to the medical world than our facilities can accommodate? Because the physicians through the centuries—including the present one—have built up more moral credit than their detractors, both inside and outside the profession, can destroy. If we sacrifice our sense of moral obligation in the struggle, the outcome won't make any difference anyway.—*D.E.G.*

Shnider, Sol M. Obstetrical anesthesia; current concepts and practice. Baltimore, Williams & Wilkins, 1970.

Stewart, William D. Synopsis of dermatology. St. Louis, Mosby, 1970.

Task Force on Research Planning in Environmental Health Science. Man's health and the environment; some research needs. For sale by Superintendent of Documents. United States Government Printing Office, Washington, D. C., 1970.

Vanishing air; the Ralph Nader study group report on air pollution. New York, Grossman Publishers, 1970.

West, Dorothy B. Medicaid and other medical care financed from public assistance funds; selected statistics, 1951-1969. For sale by the Superintendent of Documents, United States Government Printing Office, 1970.

Workshop on Comprehensive Community Services for Problem Drinkers and Their Families, Williamsburg, Virginia, 1969. Comprehensive community services for alcoholics; the Williamsburg papers presented at the workshop. For sale by the Superintendent of Documents, United States Government Printing Office, Washington, D. C., 1970.

## Along the Bookshelf

### Clendening Medical Library

#### RECENT ACQUISITIONS

Bartemeier, Leo H. A physician in the general practice of psychiatry. New York, Brunner/Mazel, 1970.

Carroll, Charles R. Alcohol: use, nonuse and abuse. Dubuque, Iowa, Wm. C. Brown Co., 1970.

The Dying Patient. New York, Russell Sage Foundation, 1970.

Gross, Robert Edward. An atlas of children's surgery. Philadelphia, Saunders, 1970.

Keeney, Arthur H. Ocular examination, basis and technique. St. Louis, Mosby, 1970.

Ledermann, Erich Kurt. Philosophy and medicine. London, Philadelphia, Lippincott, 1970.

Loss and grief; psychological management in medical practice. New York, Columbia University Press, 1970.

Mitchell, John Hugh. A new look at hospital case records. London, H. K. Lewis, 1969.

Modern trends in paediatrics 3. New York, Appleton-Century-Crofts, 1970.

O'Donoghue, Don Horatio. Treatment of injuries to athletes. Philadelphia, Saunders, 1970.

Paton, Alexander. Liver disease. Philadelphia, Lippincott, 1970.

Peacock, Erle E. Surgery and biology of wound repair. Philadelphia, Saunders, 1970.

## NEW MEMBERS

*The JOURNAL takes this opportunity to welcome these new members of the Medical Student Society, University of Kansas School of Medicine, 39th and Rainbow Boulevard, Kansas City, Kansas, into the Kansas Medical Society.*

Larry R. Anderson  
William M. Basow  
Martin L. Bauer  
Louise Bednar  
Thomas A. Bettis, Jr.  
Lee Brock  
John C. Budd  
James Burke  
Brian Buss  
Robert K. Clendenin  
William D. Edwards  
Richard Egelhoff  
Louis G. Forster  
Dennis Fowler  
Michael H. Gendel  
Jim Gessler  
Weldon L. Harris  
Herbert A. Hartman, Jr.  
Sharon Hempler  
J. W. Heryer  
Susan Huffstutter  
Kerry D. Irons  
Marc S. Jacobson  
Norman B. Kahn, Jr.  
Ken King

Greg L. Knecht  
Nancy Ann Lauver  
James Lloyd  
G. Charles Loveland  
Larry V. McDonald  
William McMahan  
Ronald G. Morford  
Nancy Nowlin  
Steven R. Nyquist  
Verdon W. Parham  
Ellis A. Penny  
Donald E. Potter  
Sheldon H. Preskorn  
Jose E. Raphael  
LaDonna Regier  
David B. Robinson  
Walter R. Ross, Jr.  
William S. Ryan  
Howard J. Swanson  
Robert S. Swinney  
Joe Teichgraber  
Kent Ulrich  
Thomas E. Walsh  
Roy Weber

# Medical-Legal Page

(This new, monthly feature of the JOURNAL is a project of the Legal Committee of the Kansas Medical Society.)

## Hospital Board's Unauthorized Extension Of Surgical Privileges Enjoined

Extension by a hospital Board of Trustees of an osteopath's limited surgical privileges to full surgical privileges, despite the recommendations of the hospital medical staff, was enjoined by an Ohio trial court. The rules and regulations adopted by the medical staff and approved by the hospital's Board of Trustees constituted a compact binding on both the Board and the staff, the court held.

The rule and regulations provided that applicants for membership on the medical staff and for surgical privileges were to be recommended by the medical staff and the recommendation sent to the Board of Trustees. The rules further provided that the Board should either accept the recommendation of the medical staff or refer it back for further consideration, stating the reasons for such action.

The osteopath had previously been certified as a member of the medical staff of the hospital with limited surgical privileges, upon recommendation of the staff. The Board of Trustees requested the medical staff to re-evaluate its former recommendations. A re-evaluation was made, and the staff recommended that an extension of surgical privileges be denied. Notwithstanding, the Board granted full surgical privileges to the osteopath.

In the litigation which followed, the trial court held that the failure of the Board to refer the second recommendation of the staff back for further consideration, stating the reasons for the referral back, was contrary to the rules and regulations and constituted an abuse of discretion.

The court granted a permanent injunction restraining the osteopath from exercising full surgical privileges and restraining the Board from permitting the osteopath to practice beyond the limitations previously set.—*Doering v. Keynes* (Ohio Ct. of Common Pleas, Hocking County, Case No. 14,459, filed March 30, 1970)

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Reprinted from *The Citation*, Vol. 22, No. 1, 1970, published by the Office of the General Counsel, American Medical Association. Copyright, 1970, American Medical Association.

## Insurance Coverage of Malpractice Claim Barred by Lack of Notice

An osteopath's failure to notify his insurer of a possible malpractice claim barred coverage of the claim under his professional liability policy, the Supreme Court of Oregon ruled. Similarly, the insurer properly refused to defend the malpractice action because of the lack of notice.

The patient in the malpractice suit had been injured in an automobile accident. He received treatment by the insured osteopath in Oregon. After his discharge, the patient continued to suffer neck and arm pain. He went home to California and consulted a doctor there. The California doctor wrote the osteopath, informing him that the patient appeared to have "a major fracture of the cervical spine." The osteopath had failed to detect this injury, which was the basis of the malpractice action.

On learning of the diagnosis of spine injury and the possible existence of a malpractice claim, the osteopath failed to notify his insurance company. Notice was not given to the insurer until the malpractice action was filed. When the insurance company was finally notified, it refused to defend the action on behalf of the osteopath or to pay any damages assessed against him.

The osteopath testified that it was his belief that, if the patient did suffer from a fracture of the cervical spine, the fracture must have been caused by a later accident. Rejecting that contention, the court ruled that total evidence justified the finding that the osteopath did have sufficient knowledge to believe that a potential claim existed. Therefore, he was required to notify the insurer of any facts of which he was aware. His failure to do so meant that the insurer was not obligated either to provide coverage or to defend the lawsuit on behalf of the osteopath.—*Falk v. Sul America Terrestres Maritimos E. Accidentes Companhia De Seguros*, 465 P.2d 714 (Ore.Sup.Ct., Feb. 27, 1970)



KANSAS STATE DEPARTMENT OF HEALTH  
TOPEKA, KANSAS

Epidemiology & Disease Control Services—Registration & Health Statistics Services—  
Kansas Morbidity Incidence  
Summary of Cases Reported in December, 1970 and 1969

<i>Diseases</i>	1970	<i>December</i>		<i>January-December Inclusive</i>		
		1969	5-Year Median 1966-1970	1970	1969	5-Year Median 1966-1970
Amebiasis .....	5	—	—	35	11	14
Aseptic meningitis .....	1	—	1	42	10	17
Brucellosis .....	—	1	—	2	2	2
Diphtheria .....	—	—	—	—	—	—
Encephalitis, prim., infect. ....	—	—	1	27	10	24
Encephalitis, post-infect. ....	2	—	—	3	2	2
Gonorrhea .....	501	501	433	6,745	5,127	4,623
Hepatitis, infectious .....	55	29	26	542	294	294
Measles (Rubeola) .....	1	3	8	72	13	*
Meningococcal meningitis .....	4	—	2	13	15	15
Mumps .....	11	67	*	165	176	*
Pertussis .....	—	—	—	8	—	8
Poliomyelitis .....	—	—	—	—	—	—
Rheumatic fever .....	—	—	—	4	7	3
Rubella (German Measles) .....	3	49	*	59	107	*
Salmonellosis .....	26	17	15	292	193	275
Scarlet fever .....	5	15	12	88	47	71
Shigellosis .....	122	10	13	260	88	110
Streptococcal infections .....	327	139	202	4,182	2,082	2,745
Syphilis .....	148	141	141	1,494	1,860	1,412
Tinea capitis .....	1	9	4	46	46	50
Tuberculosis .....	12	17	17	209	207	217
Tularemia .....	—	—	—	1	3	3
Typhoid fever .....	1	—	—	3	—	3

\* Statistics not available for 5-year median.

### COMBINED RUBELLA-MUMPS VACCINE

The American Academy of Pediatrics Committee on Infectious Diseases recently reviewed their recommendations on rubella vaccine. The committee endorsed the use of rubella vaccine for children in both community programs and in clinics and physicians' offices. There are no essential changes in the recommendations for the use of this vaccine. Recently a combined rubella-mumps vaccine has been licensed. The committee declined to make any recommendations for use of this product because of the lack of published data on its administration and prophylactic efficacy. The recommendation for mumps vaccine usage is that all males in preadolescent or older-age groups who have not had mumps be immunized. There seems to be no reason why mumps vaccine cannot be given to young children older than one year but because the disease is usually benign, the committee recommends that its use in children be considered

only when higher priority programs will not be compromised.

### ISONIAZID (INH) IS NOT ASSOCIATED WITH SIGNIFICANT LIVER DISEASE

J. D. Millar, M.D., Director, State and Community Services, Center for Disease Control, Atlanta, Georgia, has issued a statement in connection with newspaper publicity of two deaths of liver disease among 2,321 individuals placed on INH prophylaxis in February 1970 following an outbreak of tuberculosis among Capitol Hill employees in Washington. We quote Dr. Millar in part:

Transient hepatic dysfunction has been documented among recipients of INH in a number of studies. Subclinical liver involvement manifest by elevations of serum transaminase have been observed in as many as 20 per cent of recipients of INH in some studies. Transaminase levels have usually returned to normal with-

(Continued on page 96)

*112th Annual Meeting*

**Kansas Medical Society**

**Ramada Inn Downtown, Topeka**

**May 9-12, 1971**

*Scientific Session, May 11*

**The Economic Environment of Medical Care—Change and Challenge**

“The Economics of Medical Care: An Overview of Trends and Prospects for the Future”—Carroll V. Dowden, Executive Editor, Medical Economics

“The Voluntary Health Insurance Industry: Its Role and Influence in Medical Care”—Mr. James Hunt, Director, Government Relations, Aetna Life Insurance Company

“Economics of Scale in Medical Care: An Economic Analysis of Groups, Prepayment Plans, and Fee-for-Service”—James Jeffers, Ph.D., University of Iowa

“The Shape of National Policy in the Delivery and Financing of Medical Care”—Senator Paul J. Fannin, State of Arizona

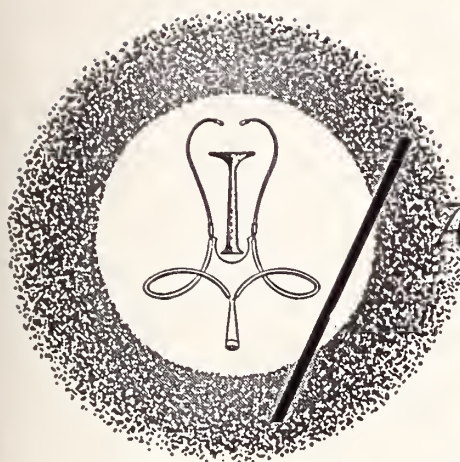
“Role of Organized Medicine in the Changing Medical Scene”—Russell Roth, M.D., Speaker, AMA House of Delegates

“Innovations in Medical Care: The Foundation Concept”—John M. Kenney, M.D., United Foundations for Medical Care, Santa Rosa, California

“Effective Peer Review and Utilization Surveillance”—H. Phillip Hampton, M.D., Tampa, Florida

***Make Your Reservations Now!***





## Announcements

*Professional meetings, conferences, and postgraduate courses of national importance are listed for the DOCTOR'S CALENDAR. Notice of the session is posted in advance to allow the physician time to make preparations.*

### MARCH

Mar. 3-6 Midwest Clinical Conference, sponsored by the Chicago Medical Society, McCormick Place, Chicago. Write: George F. Lull, M.D., 310 S. Michigan Ave., Chicago 60604.

Mar. 6-11 American Academy of Orthopedic Surgeons, Civic Center, San Francisco. Write: Charles V. Heck, M.D., 430 N. Michigan Ave., Chicago 60611.

Mar. 25-26 24th national conference on Rural Health, Atlanta Marriott Motor Hotel, Atlanta, Georgia. Sponsored by the Council on Rural Health, American Medical Association.

Mar. 26-28 American Society of Internal Medicine, Brown Palace, Denver. Write: Mr. W. R. Ramsey, Third at Market, San Francisco 94103.

Mar. 27-Apr. 1 American College of Allergists, Fairmont and Mark Hopkins Hotels, San Francisco. Write: John R. Ausband, M.D., Bowman Gray School of Medicine, Winston-Salem, North Carolina.

Mar. 28-Apr. 2 American College of Physicians, Hilton Hotel, Denver. Write: Edward J. Rosenow, Jr., M.D., 4200 Pine Street, Philadelphia 19104.

Mar. 29-Apr. 3 American College of Radiology, Chase Park Plaza, St. Louis. Write: W. C. Stronach, LL.B., 20 No. Wacker Drive, Chicago 60606.

### APRIL

Apr. 19-21 Annual spring session, American Academy of Pediatrics, Chase-Park Plaza Hotel, St. Louis. For information write

Apr. 19-22

American Academy of Pediatrics, 1801 Hinman Ave., Evanston, Illinois 60204.

Apr. 30-  
Mar. 20

23rd annual meeting, Southwestern Surgical Congress, Caesar's Palace Hotel, Las Vegas. For information write Jack A. Barney, M.D., Southwestern Surgical Congress, 301 Pasteur Building, Oklahoma City 73103.

Spring postgraduate medical seminar cruise to the Mediterranean, sponsored by the Department of Postgraduate Medicine, Albany Medical College. For information write William P. Nelson, III, M.D., Department of Postgraduate Medicine, Albany Medical College, Albany, New York 12208.

### POSTGRADUATE EDUCATION

University of Kansas:

Mar. 8-10 *Pediatrics*

Apr. 5-7 *Ophthalmology: Recent Advances in Medical and Neurophthalmology*

Apr. 12-14 *Anesthesiology*

Apr. 29-30 *Nursing Assessment—and Then What?*

For further information write the Department of Postgraduate Medical Education, University of Kansas School of Medicine, Rainbow Boulevard at 39th Street, Kansas City, Kansas 66103.

University of Colorado:

Apr. 14-16 *Respiratory Insufficiency*

Apr. 29-May 1 *Dermatology in General Practice (limited)*

For further information write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 East Ninth Avenue, Denver 80220.

# Education-Information

## Activity Report December 15-January 15

Seven releases were written and distributed to Kansas media during this 30-day period:

1. A story dealing with the growing malpractice crisis in the state and KMS recommendations for sensible laws that will keep the cost of health care down while still guaranteeing the public's legal rights. This release was moved by both the AP and UPI wires and received saturation exposure in all parts of the state. It was featured in such important papers as the *Wichita Eagle*, *Kansas City Times*, *Topeka Daily Capital* and *Hutchinson News*. The clipping service shows that it was also used extensively by smaller dailies and a good percentage of the weeklies.

2. A story dealing with the final district meeting held in Wichita. This story, like the 17 others preceding it, was personalized for the market in which the meeting was being held.

3. A story detailing the continuing decline in maternal deaths in Kansas. This release, quoting both Dr. J. A. Gleason and Dr. Evalyn S. Gendel, received satisfactory usage.

4. An updated story previously distributed in June dealing with the effectiveness of compulsory rubella vaccinations at the early school-age level. This release was distributed toward the end of the period and usage was not gauged.

5. An item dealing with the Society's peer review program. This important release moved on the Associated Press wire, which assured good story usage. It was also forwarded to all members of the Kansas Legislature as a means of alerting this significant target audience to Society activity in the important area of health care quality.

6. A release highlighting the Society's activities in bringing communities and doctors inquiring about opportunities together. This release was also forwarded to the 112 Kansas Chambers of Commerce with full- or part-time managers. A cover letter signed by Dr. Collins further detailed the service and gave tips on how to attract a doctor.

7. A story rebutting a national wire item that implied rising doctor fees were the cause for increases in Medicare costs. This story was phoned to both wire services to shorten the gap between appearance and rebuttal.

Both print and broadcast usage of news releases continues at a high level and appears to be doing a great deal of good in terms of relating health care

problems and what the Society is doing about them to the Kansas public.

During the 30-day period, we also began stage two of the Non-Commercial Sustaining Announcement Program with the Kansas Association of Radio Broadcasters. Eight 60- and 30-second spots will be programmed by the KARB during the period January 15-February 28. The last time this Association cooperated with the Society, some 32 stations programmed 1,552 public service exposures. Converted to cash, this would have meant a radio buy in excess of \$6,000—provided as a public service. Typical of these spots to be used during this 45-day period is this 30-second example:

Is someone in your family expecting a baby? The Kansas Medical Society urges you to make sure she sees a doctor early in her pregnancy and regularly. Many birth problems can be prevented or reduced if the mother-to-be consults her physician promptly and follows his guidance regarding diet, rest, exercise and general care. And if you're new in town, call your local medical society for the name of a physician.

As the reader will note, these spots pass important health information on to the Kansas listener and create identity for the Society.

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### Morbidity Incidence Report

(Continued from page 93)

out interruption of the drug. Most of the abnormalities have occurred within one to three months following initiation of prophylaxis. In some patients, clinical jaundice has developed while on INH; and in most instances, the process resolved following withdrawal of the drug. Among a total of 35,000 individuals who have received INH in an assortment of studies conducted by the Public Health Service since the mid '50's, it is known that at least 14 cases of clinical hepatitis have occurred and that at least five such patients have died (whether the deaths were due to hepatitis or other causes is not clear). Thus, although evidence of transient liver dysfunction has been documented in association with INH therapy, the incidence of clinical hepatitis among recipients of INH is not substantially different from the incidence of infectious hepatitis in the population at large (approximately 30 per 100,000).

Dr. Millar concludes that on the basis of available evidence, there is no reason to interrupt INH administration to patients who are now on the drug for treatment or prophylaxis of tuberculosis.



# Woman's Auxiliary

Everything is labeled and alphabetized these days. If it isn't HEW it's FBI or something else. In order to read a newspaper or magazine one has to learn a complete new alphabet to understand what's going on. We're not exactly sure when the trend started, but somewhere along the line somebody got tired of the old Mother Goose ABC type of order and started putting letters together in new combinations. The first of these that your correspondent really remembers are those that emerged along with FDR in the "New Deal" days: the WPA, CCC, TVA and so on.

These proved to be only a start, however, because the next thing we knew letter titles were being applied to everything from grocery stores to movies. "Gone With The Wind" became GWTW and your favorite independent grocer the IGA. So it stands to reason that the medical profession wouldn't escape the name shortening process.

Recently even auxiliary committees look a little bit like some strange new language. To name a few, there's IHA (International Health Activities), WASAMA (the student organization we told you about last month), KaMPAC and AMPAC (and if you don't know what those are, you're in a bad way), and one that most of us consider tops on our priority list: AMA-ERF.

I doubt if any of you doctors have to be told what AMA-ERF means, but I will tell you what the dean of the Kansas University Medical Center told the auxiliary that it meant to them. It is the only money available to the school that isn't budgeted for something. Therefore, it is the only money the school can use when some unexpected project comes up. Since budgets are made up three years in advance, sometimes this money is a life-saver to an important, but unplanned for, research project or for the purchase of some special piece of equipment needed immediately. Three years is a long time to wait in scientific fields when one considers that the fund of human knowledge has doubled in the last five years and tripled in

the last ten. So auxiliaries think that the money given to AMA-ERF is mighty important.

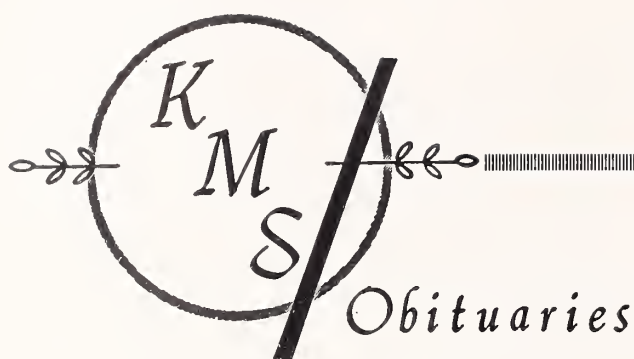
How does the auxiliary respond to this need? While some people say that women are the last of the free spenders, it also can be stated that they are darn good money-makers, given an opportunity and a good cause to work for. Auxiliary women feel that AMA-ERF is one of the best causes they know, so they sell things. The 1970 national fall conference in Chicago featured an AMA-ERF fashion show in which nine all-American auxiliarians modeled typical costumes depicting money-making projects. Included in this pulchritudinous pageant was Kansas' own Lela May Young (Mrs. Chester Young of Kansas City), a swinging, singing "Miss Groovy Music Maker." Other models were Miss Christmas Card, Miss Charmer (bracelet charms), Miss Gallant Knight (games), Miss Correspondence (note paper and cards), Miss Fruitcake, Miss Playing Card, Miss Dream Doll (toys) and Miss AMA-ERF. Costumes were appropriate, but hilarious.

Along with these universally used gimmicks, some auxiliaries have bake sales, antique shows, fashion show luncheons or teas, dances and auctions. And, of course, every member remembers and uses the sympathy donations in memory of friends or loved ones. Just to prove that we really work for AMA-ERF, we'll tell you that the Kansas auxiliaries raised and donated a total of \$8,110.33 during the 1969-70 year. Not bad, is it?

We believe in AMA-ERF because we believe in you and want to be a working part of your profession. So if our alphabet is a bit mixed up, guess it doesn't matter as long as those letters stand for something that counts.

Well, take care, and remember that the Great Pumpkin may not be watching over you, but that WAKMS is. And if you can't figure out what that means, here's a hint. It's strictly

Auxiliary Annie.



#### BERT ANDERSON, M.D.

Dr. Bert Anderson, 86, Victoria, died at St. Anthony Hospital, Hays, on December 14, 1970.

Dr. Anderson was born February 9, 1884, at Virgil, Kansas. He graduated from the Kansas City School of Medicine in 1913. After graduation he moved to Victoria and was in general practice there until his retirement in the late 1950's. Dr. Anderson was active in medical and civic organizations and in 1957 provided facilities for a day school to serve retarded children from Russell and Ellis counties.

He is survived by two brothers, nieces and nephews.

---

#### JOHN O. KENNEDY, M.D.

Dr. John O. Kennedy, 56, died in a Topeka Hospital on December 1, 1970.

Dr. Kennedy was born September 13, 1913, in Pittsburgh, Pennsylvania. He was graduated from Wabash College at Crawfordsville, Indiana, and received his degree in medicine from the University of Louisville School of Medicine, Louisville, Kentucky, in 1939. He had been in the practice of obstetrics-gynecology in Topeka since 1948.

Surviving Dr. Kennedy are his wife and children.

---

#### RALPH MAJOR, M.D.

Dr. Ralph Major, Kansas City, professor emeritus of medicine and the history of medicine at the University of Kansas School of Medicine, died October 15, 1970, at the Medical Center. He was 86 years old.

Dr. Major was born at Liberty, Missouri, on August 29, 1884. He received his medical degree from the Johns Hopkins University in 1910. In 1914, Dr. Major returned to Kansas City and the University of Kansas as professor of pathology and bacteriology and departmental chairman. He was chairman of the department of medicine from 1921 to 1950; from 1950 until his retirement in 1954 he directed the department of the history of medicine.

Dr. Major is survived by his wife, two sons and a daughter.



---

**BENJAMIN LEE MYERS, M.D.**

Dr. Benjamin Myers, Santa Rosa, California, died on January 9, 1971, at the age of 92.

Dr. Myers was born at Avalon, Missouri, on June 26, 1878. He was graduated from the University of Nebraska School of Medicine in 1909. He practiced in Iola, Kansas, moving to Santa Rosa, California, after his retirement in 1953.

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**WILLIAM A. SMILEY, JR., M.D.**

Dr. William A. Smiley, Jr., 52, Goodland, died January 9, 1971, in a Denver hospital.

Dr. Smiley was born at Junction City on July 7, 1918. He was graduated from the University of Kansas School of Medicine in 1943, and practiced medicine in Junction City and Norton before moving to Goodland several years ago.

Dr. Smiley is survived by his father, Dr. William Smiley, Sr., Junction City, his wife and four children.

---

**JAMES R. SMITHHEISLER, M.D.**

Dr. James Smithheisler, 92, Homestead, Florida, formerly of Richmond, Kansas, died on December 26, 1970.

Dr. Smithheisler was born in Ohio on January 15, 1878. He received his medical degree from Creighton University School of Medicine in 1905. He began his medical practice in Garden Plain, later moving to Richmond. He moved to Homestead, Florida, after his retirement in 1966.

He is survived by five daughters.

---

# The Kansas Medical Society—1970-1971

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VOL. LXXII  
NO. III

# IF MORE MEN CRIED

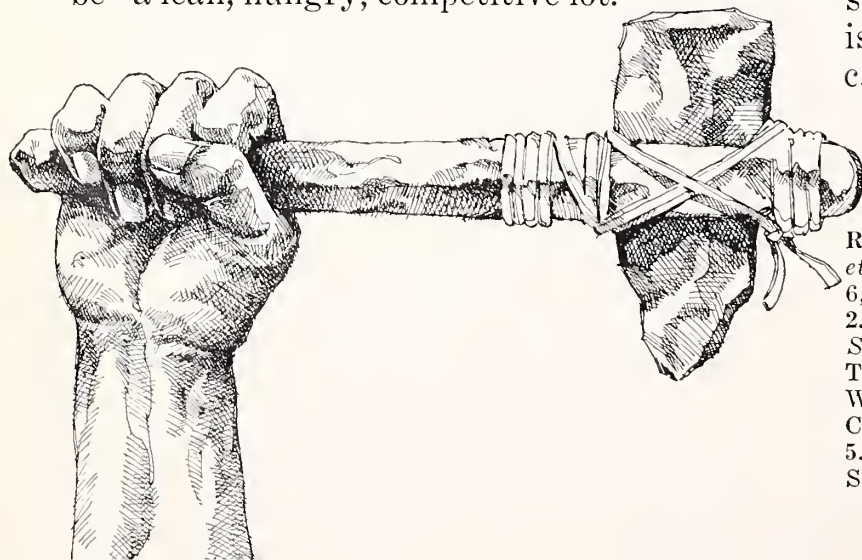


At least seventy-five out of one hundred adults with duodenal ulcers are men.<sup>1</sup>

Why? It may be significant that duodenal ulcer patients tend to crave recognition and are "especially vulnerable to threats to their manly assertive independence."<sup>2</sup>

**Hypersecretion—an atavistic response.** Stewart Wolf, who, with Harold G. Wolff, studied the personalities of duodenal ulcer patients, wonders if masculine competitiveness is related to "an atavistic urge to devour an adversary." It is striking, he reports, that an accentuation of gastric acid secretion and motility can be "induced in ulcer patients by discussions that arouse feelings of inadequacy, frustration and resentment."<sup>2</sup>

**By chance? A lean, hungry lot.** Was the link between emotions and gastric hyperacidity acquired through mutation to serve a purpose? During man's jungle period of evolution, the investigator points out, a male dealt with a foe by killing and devouring it. "It may be more than coincidence," he concludes, that peptic ulcer patients appear to be "a lean, hungry, competitive lot."<sup>3</sup>



**Big boys don't cry.** If more men cried, maybe fewer would wind up with duodenal ulcers. But men will be men—the sum total of their genes and what they are taught. Schottstien observes that when a mother admonishes a son who has hurt himself, she is teaching him that big boys don't cry. Society is teaching stoicism.<sup>4</sup> Crying is a negation of everything that society thinks of as manly. A boy starts defending his manhood at an early age.

**Take away stress, you can take away symptoms.**

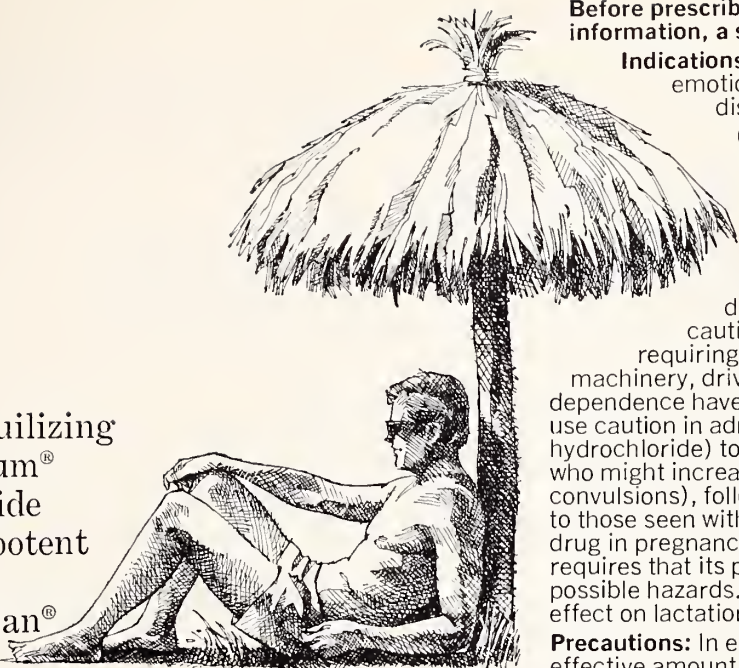
There is no question that stress plays a major role in the etiology of duodenal ulcers. Alvarez<sup>5</sup> observes that many a man with a duodenal ulcer loses his symptoms the day he shuts down the office and starts out on a vacation. The problem is, the type of man likely to have a duodenal ulcer is the type least likely to take vacations or take it easy at work.

**The rest cure vs. the two-way action of Librax.<sup>®</sup>** For most patients, the rest cure is as unrealistic as it is desirable. Still, the stress factor must be dealt with. And it is here where the dual action of adjunctive Librax can help. Librax is the only drug that can

**References:** 1. Silen, W.: "Peptic Ulcer," in Wintrobe, M. et al. (eds.): *Harrison's Principles of Internal Medicine*, 6, New York, McGraw-Hill Book Company, 1970, p. 68. 2. Wolf, S., and Goodell, H. (eds.): *Harold G. Wolff: Stress and Disease*, ed. 2, Springfield, Ill., Charles C. Thomas, 1968, pp. 68-69. 3. *Ibid.*, p. 257. 4. Schottstien, W. W.: *Psychophysiologic Approach in Medical Practice*, Chicago, Ill., The Year Book Publishers, Inc., 1960, p. 384. 5. Alvarez, W. C.: *The Neuroses*, Philadelphia, Pa., W. B. Saunders Company, 1951, p. 384.



...nes the tranquilizing  
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...chlordiazepoxide  
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...nticholinergic  
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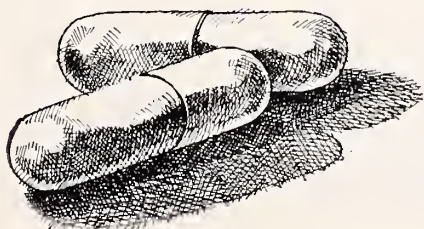


**Protects man from his own hungry per-**  
**sonality.** The action of Librium reduces  
anxiety—helps protect the vulnerable patient  
from the psychological overreaction to stress  
that clutches his stomach. At the same time,  
the action of Quarzan helps quiet the hyper-  
active gut, decreasing hypermotility and  
hypersecretion.

**An inner healing environment with 1**  
**or 2 capsules, 3 or 4 times daily.** Of course,  
there's more to the treatment of duodenal  
ulcer than a prescription for Librax. The pa-  
tient—with your guidance—will have to ad-  
just to a different pattern of living if treat-  
ment is to succeed. During this adjustment  
period, 1 or 2 capsules of Librax 3 or 4 times  
daily can help establish a desirable environ-  
ment for healing.

**Librax:** It can't change man's nature.  
But it can usually make it easier for men to  
cope with the discomfort of stress—both  
psychic and gastric—that can precipitate  
and exacerbate duodenal ulcer.

**Librax:** Rx #60 1 cap. *a.c.* and 2 *h.s.*



**Before prescribing, please consult complete product information, a summary of which follows:**

**Indications:** Indicated as adjunctive therapy to control emotional and somatic factors in gastrointestinal disorders.

**Contraindications:** Patients with glaucoma; prostatic hypertrophy and benign bladder neck obstruction; known hypersensitivity to chlordiazepoxide hydrochloride and/or clidinium bromide.

**Warnings:** Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering Librium (chlordiazepoxide hydrochloride) to known addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards. As with all anticholinergic drugs, an inhibiting effect on lactation may occur.

**Precautions:** In elderly and debilitated, limit dosage to smallest effective amount to preclude development of ataxia, over-sedation or confusion (not more than two capsules per day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

**Adverse Reactions:** No side effects or manifestations not seen with either compound alone have been reported with Librax. When chlordiazepoxide hydrochloride is used alone, drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally with chlordiazepoxide hydrochloride, making periodic blood counts and liver function tests advisable during protracted therapy. Adverse effects reported with Librax are typical of anticholinergic agents, *i.e.*, dryness of mouth, blurring of vision, urinary hesitancy and constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diets.

**in the treatment of**  
**duodenal ulcer**  
**adjunctive**  
**Librax®**

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# The JOURNAL of the KANSAS MEDICAL SOCIETY

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# Health Education

## *Educational Affiliations of Health Care Centers With the University of Kansas School of Medicine*

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### Introduction

URGENT NEEDS as well as today's compelling social pressures strongly advocate acceptance on the part of the University of a broader definition of medical education and an expanded role in this field of responsibility. It is quite possible that the shortage of health personnel and even the patterns of delivery of health care might be significantly and favorably altered by the educational impact of the school of medicine working in concert with all interested parties, institutions and agencies in our state. These efforts are most likely to be successful if activated around and through regional centers in which health facilities and personnel are centralized, preferably in relation to community hospitals of 200 to 300 beds. This regionalization has already long been perceivable in its spontaneous development. The medical school can and should facilitate the trend by disposition and leadership. Immediate and practical objectives are: (1) the expansion of the medical school's educational potential; (2) the widespread *involvement* of a greater segment of the health profession and the general community in the problems, complexities and rewards pertaining to this field; and (3) the creation of educational health centers by the stimulation and development of a *real environment* for learning at *all* levels, at *all* times.

Implementation of the concepts broadly outlined above must come about through an evolutionary process of selection, approach preliminary association, cooperative planning and stepwise development of a health education program that eventually involves the entire spectrum of graduate and undergraduate professionals.

### Developmental Sequence for Educational Program

Preliminary discussion with groups interested in educational affiliations for health education must early establish exact understanding of the implications of such agreements and the scope of the concept. Depending upon the extent of educational

activities now in operation, it is very likely that some major alteration in daily commitments of those involved will be required. Those centers approached will have already demonstrated or shown potential for a level of performance in its patient care functions which would qualify it for consideration as the

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**This document, as indicated in the title, is an exposition of philosophy concerning health education spread to unused regions in Kansas. It by design is general in its nature. It is simply a guide. Such instruments of legalistic affiliation which hopefully, will follow, must incorporate the many details uniquely applicable to the joining institutions.**

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eventual site for all levels of health education. The medical school feels, however, that there is a proper sequence for these phases of development by which the eventual introduction of undergraduate education in medicine, as well as in other health related fields should proceed.

### CONTINUING EDUCATION

In order to assure a sound base for an educational program, initial efforts should be directed toward building a solid plan for staff self-learning. The chief objective of continuing education is improved patient care; if the often repeated term "crisis in medical education" is worthy of real concern, then that phase of education requiring first attention should be "continuing education," because in this area exists the possibility of the most immediate fortuitous response. With such a foundation of effective continuing education there exists maximal assurance of survival and prosperity for subsequently established programs needed for full realization of the proposal. This form and phase of health education must simultaneously involve every professional worker in the institution if it is to achieve its full potential.

Development of a sound program of continuing education may be considered as the creation of the

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substructure upon which house staff and residency programs have a real chance to flourish after implementation of the second critical phase in the evolution of a new plan of education for the health professions in Kansas.

#### INTERNSHIP AND RESIDENCY EDUCATION

Internship and Residency Programs in all major fields should be developed wherever possible in regional hospital health centers in affiliation with the University Medical Center Hospital programs.

It has long been known that physicians at least are more likely than not to practice within a reasonable distance of the area in which they received their graduate training. This proposal then seems one logical step toward solution of the local physician manpower problem.

The advantages which a residency program brings to the educational environment of a local center are threefold: (1) training of the individual resident; (2) enhancement and stimulation of staff learning; (3) supplies substructure upon which undergraduate education is based. The resident in the educational hierarchy in medicine is as vital to a productive learning situation as is the teaching or research assistant in other fields of higher education. No effective undergraduate health education program has a chance of success without the assistance of a properly motivated and diligent house staff.

#### UNDERGRADUATE MEDICAL EDUCATION

The final phase in the activation of an educational health center affiliation comes with the introduction of undergraduate students of both medical and the several allied health disciplines. Forcing this phase ahead of the foundation base of good continuing education and an enthusiastic graduate house staff program can only lead to failure of the entire plan. It is quite probable that initial efforts should first involve only senior students in any discipline and that even with this group the initial experiences be of an elective and preceptorial type. This juncture in implementation of the plan is highly sensitive and ideally requires several additional items in the environment.

Many students of health education have pointed out the prime desirability of coexisting programs in medicine, nursing, medical social work, physical therapy, etc., in order that students gain a broader understanding of roles of their professional colleagues and acquire some skill in collaborative effort.

#### Desirable Complementary Programs and Institutional Features

A highly desirable feature of any affiliated educational center is a sufficiently broad spectrum of divisions and specialties of medicine to offer the cross

fertilization needed for an effective educational program. A solitary discipline in medicine has little chance of properly nourishing a program. Disciplines such as pathology and clinical laboratory, radiology, surgery, medicine, psychiatry, pediatrics, obstetrics, and family practice provide a sufficiently rich environment for any and all levels of learning in medicine and potential for such depth and breadth should be eventually achieved. Pursuing the same philosophy, students at any level in a solitary discipline have less chance of ideal achievement than if in association with others.

A leading weakness of health education, and particularly medical education, at all levels is lack of adequate contact with ambulatory patients. The ordinary medical school outpatient clinic has long failed to supply this need, in part due to the inadequate facilities, lack-luster operating personnel and slipshod professional care given by some of the attending staff. Nevertheless, some similar activity is necessary and the private physician's office at some distance away is not a proper substitute. Such an environment, while providing moderate continuity of care, offers little possibility for delegating responsibility to the student and little opportunity for his learning about matters of prescribing, compliance, and rapid evaluation of patients. Here may be the place to devise new patterns for teaching. So long as control and means for evaluation are built in, a break with traditional experiences pose no danger.

Re-emphasis and revitalization of home care is in the future of health care and some experience in this area of the system needs consideration. No better area exists for collaboration of staff, students, residents, and various allied professionals.

An emergency room experience is needed for all levels of training and education. Since such exist in virtually every hospital, its staffing and supervision become the important item.

Extended care facilities are a part of every community in Kansas. Ready access to such facilities is again a necessary feature for this health education plan. Clearly defined program objectives and proper supervision cannot be neglected in such an involvement.

#### Regional Health Education Centers Assessment Guidelines

According to the educational mission decided upon for a particular affiliated institution, the aggregate of facilities required will vary. Facilities designed with a primary orientation to the provision of services may be inadequate or become inefficient when additional requirements are added for an educational program. Furthermore, facilities cannot be uniform-

ly correlated with educational capacity or quality, but only reflect at best, potential capacities.

**Needs of Educational Program—Inpatient facilities:** Bed occupancy of the hospital represents the most clearly identifiable reflection of facilities. It can be roughly correlated with the other components which together constitute a potential educational program. However, considering the collected facilities of an institution, the number of beds alone has no priority of significance.

Nursing units are the organized subunits in which inpatient functions are performed. The unit must be large enough to permit access to students and instructors yet minimally interfere with operational personnel. Space for writing and for communication devices is required, and should be arranged to minimize patient interfacing at the nursing unit station.

Conference rooms and classrooms must be available. It should be anticipated that as an educational program is implemented for one group of professionals, it is inevitable that other groups will want similar opportunities, requiring additional conference and classroom facilities. Optimally, these facilities should be planned so shifting of audiovisual equipment is minimized.

Library facilities should meet the minimum standards as set by the Association of American Medical Colleges in the *Journal of Medical Education*, August 1967 and optimally should include the *Index Medicus*, the 100 most utilized American journals as compiled by the National Library of Medicine and have access by communication systems to the Kansas Library Network of KRMP. The library area should be near the patient care area and have adequate space for desk work and reading. A facsimile device should be available in the library area.

Medical record department facilities should be available for review of charts by students, and be separate from the transcribing area to minimize confusion.

Laboratory facilities should be housed to provide student access without interfering with the usual routine of the laboratory personnel. Automated capacity for routine chemistries, routine bacteriology, rapid and accurate blood analysis, including clotting and coagulation studies should be available. Blood storage facilities and a histochemical laboratory should be provided.

#### AMBULATORY FACILITIES

Outpatient facilities should be provided adjunctive to the inpatient and emergency services. The facility should include an area for clerical and nursing personnel, and adequate, well planned reception areas for patients. Ideally, a contiguous area would house the home health care coordinator, social worker, and other related health or volunteer workers

oriented to ambulant patient services. For the convenience of patients, facilities should be arranged so that x-ray and laboratory services are available within or adjacent to the outpatient area. Conference rooms for instructors and students should be provided in the outpatient area. It is recognized that in many community hospitals this is not a traditionally available service unit. Improvisation and ingenuity may be necessary.

Emergency service facilities should be provided which are commensurate with the capabilities for managing emergencies as set forth by the hospital staff and management.

Extended care facilities with which the hospital has working arrangement should be available.

#### Affiliation Agreement Guidelines

Affiliations between medical schools and teaching hospitals vary widely in their specific arrangements. A study of these relationships in the United States was sponsored and published by the Association of American Medical Colleges in 1962. Essentials of this study serve for many remarks throughout this guide.

It is generally recognized that common goals of a medical school-teaching hospital union comprise the interdependent items of education, research, patient care and community service. The relative position of importance for each area of effort may vary, but education and patient care pervade the entire endeavor.

Commonly used terminology describes affiliations as major or limited. To be eligible as a major affiliation, according to definition by the Council on Medical Education of the American Medical Association, a hospital must be a major unit in the clinical clerkship teaching program. Limited affiliations are generally understood to involve a single department in an off-campus institution for the teaching of students or training of interns and residents.

Although a limited affiliation is usually a program of one department only, it is also possible that special programs of small size, each sponsored by two or more departments in the same affiliated hospital, could each be designated as a limited affiliation. However, to minimize fragmentation and maximize efficiency, all initial efforts should envision the broadest spectrum of possibilities for each affiliation considered. For illustration note the following, any one of which might become involved.

**CATEGORY A—MAJOR AFFILIATION:** Conceivably an affiliation agreement might be made with an institution in which the medical school took a major responsibility for recruiting, selecting and appointing a full time senior and resident staff with the goal of duplicating in large measure the teaching, patient



care and research activities of the medical school hospital.

**CATEGORY B—LIMITED AFFILIATION:** The highly developed community hospital where the clinical facilities, auxiliary services and characteristics of the staff would approximate that of the university hospital, although some of the institutional goals might be different. Here residents, students and faculty interchange could supply important benefits across the board.

**CATEGORY C—LIMITED AFFILIATION:** A community hospital of limited development, where facilities, personnel and auxiliary services remain uneven, being well developed in some areas, by inadequate for supplying teaching needs in others. Here teaching facilities might at least initially provide only electives in the areas of strength.

**CATEGORY D—LIMITED AFFILIATION:** Community hospital with undeveloped teaching resources may enter into long-term programs for the development of teaching facilities aided by guidance from the medical school. It should be recognized that the categorization of affiliation need not be fixed at any level but that a hospital may well start in one category with the object of developing toward a closer affiliation in time.

An initial phase in development of an agreement is that of evaluation and assessment of the prospective affiliate hospital facilities and institutional goals, particularly regarding the educational potential. In the second phase of negotiations the commitment of the staff to the appointment of a director of medical education and the appointment of full- or part-time chiefs of staff with tenure of perhaps five years should be resolved. Thirdly, understanding must be accomplished concerning status of the various staff members in the educational activity.

It seems clear that affiliation agreements are more likely to be strong if they provide mutual benefits. A broad but nonspecific agreement, dealing only in generalizations, has less value and is more susceptible to misunderstanding. Specific agreements tailored to particular institutions and based upon carefully spelled out commitments are invariably more satisfactory.

Affiliations must be formalized and legalized by a written agreement between the Board of Regents of the University of Kansas and the governing board of the outside institution. When government institutions are involved, the agreement must be approved by the highest authority of the responsible government unit. The written agreement shall be a contract which defines the obligations, responsibilities, and privileges of both institutions in detail. It must be in agreement with the constitution and by-laws of the relating institutions. It shall state a finite duration of the affiliation and outline specifically methods of amendment of the agreement. Each pro-

posed affiliation of the University with an outside institution for the purpose of creating and developing a program of teaching and research by the school of medicine must be approved by the executive faculty and vice-chancellor before submission to the Board of Regents for final approval.

## **Operational Guidelines for Affiliations**

### **FACULTY-HOSPITAL STAFF RELATIONSHIP**

Of several issues burdened with potential emotionally affected responses, this is the most susceptible. The goals and objectives of the entire plan must be crystal clear to everyone.

Each prospective affiliation will involve institutions already successful in their presently viewed objectives of patient care and community service. Establishing a relationship with the medical school to the purpose of expanding the hospital's mission can be menacing to the institution's administration and to the individual and professional staff in general since it insinuates some revocation of autonomy.

Moving precipitously into an organizational pattern desirable for educational activities can be traumatizing if the staff is arbitrarily divided into qualified and nonqualified faculty members for the new learning endeavors. Motivation and interest represent the most important characteristics for the faculty function in this health care environment. Training is, of course, a quality of importance but the environment for learning is the sought for characteristic of this new development. It is quite probable that every professional in such a center is making a contribution to this atmosphere, hence will make a positive contribution. Previously discussed is the possible tension producing factor generated with the insertion into the staff-faculty midst of full-time faculty members, particularly if they are recruited from the outside. However, the latter do accept much of the educational organizational details which must be reflected to the school of medicine. Most often the affiliate staff will be happy to forego such requirements.

### **SELECTION OF FACULTY**

Accumulated experience in this field of inter-institutional relationships strongly suggests that power of appointment to the faculty resides with the medical school. Power of appointment of a faculty member to the hospital staff resides with the hospital. Members of the staff of the affiliated institution who serve as medical school faculty in the teaching program should be selected and appointed through joint efforts of the medical school and the hospital. The hospital has the sole responsibility for the appointment of any member of its staff even though they do not participate in the teaching program.

Both the medical school faculty leadership and the hospital staff leadership need to achieve real ob-

jectivity in the process of selection and rejection. The entire plan requires mutual understanding and responsible acceptance of some alteration in operational procedure for the sake of accomplishing an expanded mission, a mission designed to improve health care in Kansas.

#### FINANCIAL ARRANGEMENT

There is no consistent formula for action regarding payment of staff-faculty members. Salaries should be derived from both medical school and hospital funds for important and key faculty members. The "geographic" full-time status for such personnel is desirable and, under such circumstances, for fringe benefits common to similar status in the medical school should be accomplished. The ratio of payment between medical school and hospital should be negotiated utilizing a formula which reflects the time spent in the major areas of concern—patient care, teaching, community service and investigation.

#### STAFF—FULL-TIME, PART-TIME, VOLUNTEER, NONPARTICIPANT STAFF

The hospital and its staff should be prepared to accept, as an essential part of the educational effort, the addition of one or more full-time faculty and, in addition, some who will be part-time, perhaps geographic, who will contribute heavily to the educational program, but who will still earn a substantial amount of their income by private practice. Another component of the educational and training program will occur in outpatient facilities, emergency rooms or in home care functions. Here the teaching may well be carried on by volunteers.

Hopefully and expectantly, those staff members who for many reasons may not be actively involved will sympathetically support the expanded mission of their institution and continue their contribution which has made the affiliation desirable.

#### SCIENTIFIC STAFF

Many large community hospitals have already established the highly regarded contributions which some basic scientists can make to the effectiveness of patient care. Obviously, these same people add to the strength of the academic program, and the possibility of incorporating them into the plans should be surveyed initially because of the space implications involved. Provision of salary for this type of personnel poses more complexity than for other staff members, but is not insoluble. Initially, this feature of the staff-faculty problem is of minimal concern and will become so only as the program becomes more extensive and sophisticated.

#### CONTINUING EDUCATION

Effective Continuing Education, basic and vital to success of all subsequent exercises has to do with

that unceasing effort that must be made by physicians and their associates to maintain their professional competence. All too often such a program is considered accomplished with the publication and posting of a list of visiting lecturers, or completion of arrangements for visits of the circuit riders. All such activities should focus on and be part of the daily routine of medical practice and health care in the community. All health personnel must be involved.

Effective education requires participation and involvement of the student. The visiting lectureship is of limited value—especially when not related to the concerns of the physician. A program of conferences, rounds, live case-centered discussions, etc., at the local level offers the best opportunity for meaningful continued education and also provides the forum for stimulation and mutual education that residents and undergraduate students can bring to a program.

Peer association such as is possible with greater centralization and institutionalization of health practices offers a richer intellectual environment, greater consciousness of the need for competence, greater ease of learning and greater potential for career satisfaction. This same environment facilitates cooperative teaching from the outside as well as on-the-job self-education.

The effectiveness and the opportunity to measure the effectiveness of an educational program is enhanced, if in its earliest stages of planning there be formulated, by those responsible, a statement of specific objectives which the program should achieve with its students. Such objectives include the following categories: (1) changes in the attitude and approach of the learner to the solution of medical problems; (2) correction of outdated knowledge; (3) the exposition of new knowledge in specific areas; (4) the introduction to, and mastery of, specific skills and techniques; (5) alteration in the habits of the learner.

All continuing education should come about through deliberate design involving: (1) curriculum content; (2) methodology; and (3) evaluation.

#### PATIENTS—TEACHING, NONTEACHING

Students in the health sciences require patients, an indispensable element for this form of educational program, setting it apart from other endeavors requiring only a student and a teacher. The patient and his surroundings contribute enormously to the environment necessary for learning. Excellence in the care extended to the patient provides both quality and quantity to the teaching. All patients admitted to an affiliated health center or to any specifically designated teaching unit or area of a center should be admitted with the understanding that they will



be participants in the teaching program. Rare exception should be made only if the physician responsible for the patient feels that such participation might be contraindicated. Complete socio-economic integration becomes an important concept. Medical education in the health sciences has been facing this problem and adjusting to it over several years as social and health legislation has altered the manner in which health costs are paid. Conditions under which patients are to be excluded in the teaching program requires early and complete discussion.

Teaching versus nonteaching services invariably haunt discussions of this type, particularly regarding which patients will be involved in ward rounds, conferences, etc. One major asset of a teaching hospital is that all patients are regarded as teaching patients. Quality of care is constantly under observation and usually maintained or even raised by the mutual help extended by an active, cooperating group of associates. Threatening fear on the part of staff members not accustomed to this atmosphere rapidly dissipates and is replaced by a feeling of increased confidence and security.

#### THE HOUSE STAFF

Appointment of house staff will depend on the particular arrangement between the University and affiliated hospital. If house staff are to rotate between the two institutions, or among more than two institutions, one of which is the University hospital, then house staff appointments made by the affiliated hospital should be subject to approval by the University. Reappointment of house officers who rotate as above should be subject to approval of the University. Quotas in any specialty should be subject to periodic review, and appointments made according to best estimates of future manpower requirements in the area of the affiliated hospital.

Rotation of house officers between the University hospital and an affiliated hospital should be agreed upon by the involved institutions on the basis of: (1) the best estimate of quality educational capabilities in selected areas of the affiliated hospital subject to periodic review; (2) joint agreement concerning the house officer in obtaining his educational objectives; and (3) a scheme which provides maximum continuity in the educational process for both institutions.

Salaries, fringe benefits and policies regarding overtime, and "moonlighting" and vacation time should be agreed upon, subject to annual review. Responsibility for dispersing stipends and accountability for maintaining records regarding fringe benefits, overtime, etc., should reside with the institution with which the house officer has a formal contract.

Teaching responsibilities of the house staff should

be subject to periodic review. Formal teaching obligations of the house officer should be commensurate with his position in his educational program.

Perhaps a mechanism of appeal for the house staff in regard to formal teaching obligations should be considered, the objective being to maintain a reasonable balance among faculty, house staff and students.

Quality in educational programs depends on quality in patient care. Both are dependent on surveillance and study of the respective processes. Opportunities for research into these processes must be provided the house staff. Faculty leadership, appropriate planning of schedules, easy access to charts and records and financial assistance when needed are necessary prerequisites to house staff research endeavor. Research efforts by the house officer should merit special consideration between the affiliated hospitals to provide consultation, facilities, funds, and encouragement.

#### MEDICAL STUDENTS AND PATIENTS—STUDENT-PATIENT-PRIVATE PHYSICIAN RELATIONSHIP

In any affiliation program it is hoped that medical students will receive as much experience and practice as they received at the parent teaching hospital. The patient population, in teaching hospitals the world over, is not the same as that in general community hospitals. Although teaching hospitals are attempting to become more involved in community medicine, their patients have been primarily from three groups of the population: (1) the indigent; (2) those referred for special treatment and investigation which cannot be obtained elsewhere, and (3) those who seek the special skills of the prestigious clinical staff.

Patients in the so-called "indigent" group are rapidly disappearing and should no longer constitute an isolated group set aside for teaching purposes. Patients in the other groups sense that they are in the hospital for the same reason that medical students are there; therefore, they accept the students as the price of the special facilities of the teaching hospital. All patients should be teaching patients. This fact in life needs to be stated because it exposes clearly, a difficult problem.

The term doctor means teacher. Most physicians know this. Practicing physicians will be expected to provide teaching and a learning experience. This cannot be spelled out precisely; it can only happen by a diffusion of influence. Management of the students and the patients rests in the hands of two people: the practitioner and the resident physician assisting.

Most physicians have been residents in teaching hospitals; in any case it will become very much easier for the physician to delegate many traditional medical duties once he, himself, has established an easy relationship with the residents and interns.

The community will very quickly come to know and pridefully accept the educational mission of their community hospital; and it may properly reason that such has occurred because its facilities are more complete than the average.

#### THE SCOPE OF UNDERGRADUATE STUDENT ACTIVITY

In any affiliation agreement, it should be assumed that duties and responsibilities of students will be much the same as in the parent teaching hospital. It seems reasonable, however, to reduce their role in obstetrics and surgery to bedside management and to little more than operative assistance, or even attendance. It should also be clearly stated that what the medical student is not allowed to do, either in general or to an individual patient, is the prerogative always, of the personal physician.

#### COMPREHENSIVE CARE

Students should see patients assigned to them after they leave the hospital. Seeing these patients in a physician's private office is generally unsatisfactory but has possibilities if the experience is properly planned and supervised.

An outpatient clinic should be available for medical education, both for seeing patients in the first instance, and for following patients after they leave the hospital. This will eventually involve some expansion of the clinical and paramedical staff, since it will take longer to see any given patient if medical students are in attendance.

#### EXTENDED CARE FACILITY

The type of medical care and the tempo of life in a community hospital may be different from that in an acute general hospital. One of the major deficiencies of most teaching hospitals is in the teaching of geriatrics. An extended care facility may prove to be a golden opportunity for the provision of experience in the care of the elderly. Students should be better situated to appreciate that extended care represents a vital later phase in the continuum of medical care; a phase in which time moves slowly in contrast to the pace in an acute hospital.

#### Research

Research activities in an affiliated hospital should be related to the type of affiliation and the facilities and personnel of the hospital. For example, major affiliation hospitals should develop both basic science and clinical investigations similar to programs in university hospitals. Limited affiliation hospitals should concentrate on goal-directed research, chiefly concerned with patient problems and improving the delivery of health care. This might emphasize, for example, studies in the use and training of paramedi-

cal personnel to undertake routine duties currently carried out by physicians, the use of the computer in hospital charting, the development of extended care facilities, care for the terminal patient and hospital based family practice.

#### Evaluation and Review

There should be a program of ongoing and periodic evaluation of the affiliation to reaffirm that the defined goals of interested parties are being met.

Obviously, high quality education cannot be carried on in a milieu where high quality patient care does not exist. There is a basic responsibility of the affiliating hospital as a corporate entity involved in community service to maintain public accountability for the quality of its public services. This is done through a variety of means including the compliance with the requirements of the Joint Commission on Accreditation of Hospitals, accreditation of residency and internship programs, internal utilization and peer review mechanisms, state licensure programs, and special evaluation mechanisms. Such items in this listing, plus any other which may be by agreement pertinent to the specific affiliation, should be under constant surveillance and review. Mutually agreeable mechanisms for correction of deficiencies should be negotiated.

The medical school, in turn, has a responsibility for constant surveillance of the patient care processes within the institution, where students are experiencing their initial patient care contacts to see that only the highest level of performance of the process enters into the student's work setting. In the last analysis, educational processes, because of the openness of the educational exercises should be enumerated and recognized as incumbent upon all parties involved in affiliation, i.e., grand rounds, death conferences, difficult problem seminars, clinical pathological conferences.

Evaluation of the educational process can best be accomplished by the accepted mechanism of student and house staff appraisal where students and house staff from the clinical center are subject to comparison with the performance of peer groups in other parts of the school.

#### Summary

Expansion of health education in Kansas by means of affiliation between the University of Kansas School of Medicine and certain hospital health centers in the state raises many points for consideration. The preceding account assembles such features and sets out certain guidelines for the conduct of initial as well as final discussions, hopefully leading to successful working agreements. It is not proper to pre-

*(Continued on page 113)*



# The Family Practice Concept—

—a *Kansas Definition*

**EDWARD C. DeFOE, M.D.,\*** *Kansas City, Kansas*

THE OUTLINE which follows has been prepared by the Advisory Committee for Family Practice of the University of Kansas Medical School.

The committee is charged with the responsibility for: (a) Selection and recommendation for appointment of a chairman of the department of family practice. (b) Serving as an advisory committee to the chairman during the coming year.

The outline is developed to serve as a reference base for the use of candidates interested in the chairmanship, for medical school faculty understanding of the committee's philosophy and approach to the development of such a department and for purpose of projecting to the broader professional group throughout Kansas the intent of this development—to prepare family physicians intellectually and emotionally for a primary medical and health care role which will most effectively meet the needs and expectations of the people of Kansas.

The outline is necessarily broad in scope and limited in specifics as it is not our intention to confine imaginative leadership. At the same time, in order to understand the opportunity pathways, it is essential that potential leadership be aware of the confinements imposed at this particular point in time by current cultural, geographical and functional realities.

The committee has attempted to answer six questions. Why do we need a family physician? What should the function of the family physician be? What should his body of knowledge and area of technical proficiency be? Within what framework should he work? (The latter naturally leads to the question of the training framework for his education.) What should be the relationship of the family practice department with other departments in the medical school? What should be the relationship with community professionals and community agencies?

## **Why Do We Need Family Physicians?**

In order to answer this question we have to examine the various health needs of the public, allocate appropriate personnel to fill these needs, and then decide whether there is a void present in the area of primary patient care.

A large part of the total job of primary continuing

care delivery by physicians has been done by the general practitioner and is still being performed by general practitioners. However, there are progressively fewer students choosing general practice as a career. It is stated in the Coggeshall report that most medical school graduates prior to World War II entered directly into private practice after a year of internship. However, 80 per cent of medical graduates at the time of the report (1965) engaged in special training before entering medical practice. In addition to this, review of the history of various medical school classes subsequent to graduation reveals that many general practitioners leave their practice to return for graduate training in specialty areas of medicine. This attrition continues over as long as eight to ten years following graduation. The inevitable result is that the public puts an increasing demand on specialists of medicine to fulfill the role which formerly was filled by the general practitioner. This creates the paradoxical situation that physicians who are becoming increasingly specialized will be called upon by the public to fulfill a broader and broader role for some of their patients in the absence of specific training for this role. At the same time, general practitioners (as we currently define them) who remain in practice will need to define their role more precisely in the future in order to continue to perform effectively.

The family specialist of the future can be a more effective physician by virtue of his special training. He can also more satisfactorily contribute to the health and comfort of his patients through their understanding of his base of expertness attained through a formal training process. In addition, his opportunities for continuing enthusiasm in his role are enhanced by his encompassment of a specific knowledge base which qualifies him as expert and which gives him a structure upon which to continue to build.

## **What Should Be the Function of a Family Specialist?**

The family physician of the future must participate directly in the provision of total medical care and in the supervision of total health care to all age groups. He must be willing to accept this responsibility on a continuing basis over prolonged periods of time. He should be directly involved in the pro-

\* Chairman, Advisory Committee for Family Practice, University of Kansas Medical Center.

vision of medical services most of the time and in a role of supervisory responsibility for health service all the time (through delegation where appropriate). He should be knowledgeable regarding availability of those services he and his associates do not provide. However, relinquishment of direct responsibility for certain services should not imply relinquishment of responsibility for total patient care.

He will be involved in (1) health maintenance and disease prevention, (2) the diagnosis and management of common disease (common should not be equated with trivial or simple diseases), and (3) interdisciplinary coordinative activity.

His function is dependent on the principles of availability of the health care apparatus, coordinating function for guidance to other areas of help where necessary, and health promotion for the patient.

By availability is meant, for his patients, 24-hour access to a responsive system for diagnosis and treatment of episodic illness as it occurs. This does not necessarily imply a continuous 24-hour, direct one-to-one relationship but rather, group relationships in which the immediate responsibility for direct medical care is delegated to other physicians or other professionals at certain times.

Responsibility for health maintenance and disease prevention may at times be encompassed in a more indirect manner. However, his availability to the patient will be essential.

Through the family physician's understanding of the health care apparatus and the patient's understanding of the family physician's responsibilities and function, the patient is provided comfortable entry into high standard medical care no matter how complex.

The family specialist must also serve a coordinating function with other professionals in guiding the patient to other areas of help where necessary. This may be in relationship to associate medical specialties or in consulting with other health professionals when necessary. This involves knowledge of functions of associate health professionals such as visiting nurses, social workers, clinical psychologists, family agencies, etc.

A health promotion and health maintenance role is one which will undoubtedly become of major significance in the future. Because of his unique role which gives him access to the total family, the family physician is in a key position to be most effective in promoting health and preventing medical disease. It is self-evident that successful primary prevention is one of the most effective ways of increasing the efficiency of the health care apparatus and of reducing the gap between the supply of physicians and demand for services. Availability to him of all health resources (hospital, individual profes-

sional agencies and so on) will be necessary for maintenance of his role.

### **Body of Knowledge and Technical Proficiency**

The family physician, about whom we are talking, will be practicing in the year 2000. He must be trained in a different manner from the way in which we are training physicians at the present time. Many reasons have been given to explain the decline in attractiveness of general practice to medical students of today. It is not necessary to recount all of these but we should consider one reason that seems pertinent and which is not emphasized very often.

As one looks back on the recent history of medicine, there is agreement general practice was at its zenith in the late 1920's and 30's—probably until World War II. During this time, the general practitioner was trained as an undergraduate medical student and as an intern going into practice directly from his internship. An important point is that, in most medical schools, he did receive training for general practice as an undergraduate and as an intern which was comparable to that of most of his colleagues and which was adequate for the period in which he was to begin his practice.

Following World War II interest in specialty training accelerated, and a progressively larger number of students went into specialty training following internship instead of going into practice. In addition, the character of undergraduate medical education and of internship gradually changed to further influence more students to take additional training after internship. Consequently, all other forms of practitioners, except for the general practitioner, were trained formally in an identifiable discipline. Of all the areas of medical practice, general practice is the only area in which no satisfactory specific training for the job to be performed is available, despite the fact that his job is the broadest and most difficult of all. This is one important factor in explaining the declining appeal to the medical student of general practice as a career. It probably also accounts for the discouragement of many general practitioners after they have practiced for a few years.

The family physician must be provided with a highly specific training program which incorporates a unique body of knowledge aimed at helping him effectively discharge the responsibilities he will assume in practice.

This body of knowledge most appropriately will be concerned with the life cycle of the individual, the life cycle of the family and the relationship of the individual to the family and community and in turn their effect on him.

The family physician must recognize his role as a



clinician. This includes maximum understanding of human behavior pertaining not only to others but to himself.\*

He must understand the extent to which environmental circumstances and personal anxieties influence interpersonal relationships. This includes exploration of the nuances of doctor-patient relationships. Definition of the various types of patient roles should be a part of this knowledge. It includes consideration of the nature of agreements (contracts) arrived at with patients. It also should include definition of the proper use of consultation with other physicians (doctor-doctor relationship) relative to definition of responsibility towards the patient.

Also to be incorporated is knowledge of the areas of interest and ability of other health professionals such as clinical psychologists, sociologists, visiting nurses, as well as the knowledge of the function of various social agencies (governmental and nongovernmental) that may be located in certain communities.

He must be competent in communicative techniques. He should have structured intensive training in history-taking from the point of view of outlining specific syndromes, in the determination of what brings a patient to the physician and in the determination of environmental-patient interactions which determine personal development, behavior and responsiveness to the professional.

Secondly, the family physician must have knowledge of the natural history of disease; particularly of common diseases, both relative to the disease state and the influence of disease on the patient, the patient's family (both immediate and extended), and also relative to the influence of external factors on the disease process. In addition to description of the natural history of the fully developed disease process itself, considerable emphasis should be placed on host-vector-environmental relationships involved in the genesis of the disease so that preventive

measures may be instituted prior to the development of clinical symptoms.

This is of particular importance in caring for children. It is felt that in this area the preventive role should be maximally developed. The family physician should be knowledgeable of physiology of pregnancy and labor, the implications of change upon the mother and child, genetic combinations of the parents, the effect of virus infection and drug ingestion on the pregnant woman and the fetus. He should be well versed in psychological and cultural combinations, including such factors as interracial and interfaith marriages because of their effect on the developing child. He should have an understanding of normal, interpersonal relationships so that he can recognize deviations from the normal and better understand family structure.

Another period in the life span where some of these influences are of importance from the point of view of preventive medicine is in the early middle age adult period.

Thirdly, knowledge of treatment of illness in a holistic manner is essential. Both by virtue of his training (through recognition of the multiple factors influencing natural history of disease) and by virtue of his unique experience with the patient's family over prolonged periods of time, he will be in an excellent position to select the most appropriate treatment from the varying possibilities that usually must be considered.

This includes understanding the importance of assuming continuing responsibility for his patients. Continuing responsibility involves the ambulatory setting, the hospital setting, and the home and group setting. In order for the student to incorporate this effectively, the training program must be developed in such a manner that the trainee's environment will simulate as closely as possible his future practice environment.

Fourth, he must have a knowledge of the dynamics of family development, and of individual developmental crises and their influence on the well-being of the patient. This should involve study of various behavioral patterns extracted from clinical psychology, cultural anthropology, sociology of aging, comparative religion, comparative psychology of various social economic strata, psychology of chronic illness, psychology of dying, etc. He should understand contemporary American family life including social and religious attitudes toward conception control and family life planning. Such a background should enable the future physician to talk freely and knowledgeably with his patients rather than to merely tell the patient what he has learned from his own family experiences. The family physician in training should be exposed to the attitudes of pregnant women, the

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\* "Medicine is concerned with the care of health (maintenance and restoration of health) of human beings by human beings. This definition is certainly not controversial; at the same time it recalls the human facet of medicine. But the definition does more than serve as a reminder of the relevance of the human element that the concept of medicine implies: it articulates this relevance. It emphasized the fact that in medicine object and subject, i.e. patient and physician are fellow beings. They are equals in the ontological sense. In other professions of care, e.g., maintenance engineering, veterinarian medicine or pastoral care, object and subject differ. Machines are completely cognitively transparent, men are not; animals are inferior in terms of human rationality; god, or whatever name we may give to the object of our unconditional loyalty is superior. Speaking in terms of practicality, physicians do not know more about patients than they know about themselves." Guttentag, Otto E.: "Medical Humanism: A Redundant Phrase." *Pharos*, 32:12-15, January, 1969.

emotional acceptance of the unborn child, the importance of the father in giving emotional nourishment and support. Normal individual development, patterns of family life, and individual reactions to stress and disease should be presented. His study of psychiatric illnesses and emotional reactions should be from a broad base rather than through the learning of specific psychiatric syndromes.

The fifth area of importance is knowledge of epidemiology and statistics. This is necessary to enable the clinician to assess the significance of various factors altering the pattern of well-being of the individual and the family and to enable him to fulfill his role in preventive medicine. This also is helpful in furthering his knowledge through contribution to judgment in evaluating the quality of information in scientific papers.

The sixth point relates to knowledge of skills and contributions to be expected from other health professionals. It is apparent that he should be knowledgeable of the principles of pediatrics, internal medicine, obstetrics and gynecology, psychiatry, surgery, and behavioral sciences in order to function effectively. He must be well trained to handle emergency situations. In addition, he should understand administrative office and fiscal management principles.

Finally, he should be provided with the knowledge and instruments necessary for his continuing education and his contribution to change. Through documentation of his patients' expectations and needs and the details of the process addressed to those, he can build upon the knowledge and technical base he and others should have for appropriate adaptations.

### **The Educational and Training Framework**

The manner in which the training for family practice is developed will be of critical importance to the success of the program. An important factor will be equal consideration with other programs for time in the undergraduate curriculum.

At the undergraduate and graduate training level, it is essential that environments be developed most appropriate for ultimate professional function of the family physician. As 80 to 90 per cent of his time will be spent in ambulatory care it is essential that his training environment have this built into its construct. It is equally essential that the ambulatory settings be structured so as to most effectively meet the ongoing primary health promotion as well as medical care needs and expectations of the community served. As the physician in training gains patients he should accept responsibility for these on an ongoing basis; possibly for the duration of his tenure with the program.

When it becomes necessary for the patient to be

hospitalized, it is also important that the trainee continue to assume responsibility for hospital care in conjunction with a family practice staff physician. He will then have opportunity to utilize this continuing relationship to implement principles of health maintenance.

The purpose of the training will be best served if patients are representative of a cross section of society from the point of view of economic and cultural strata, intellectual capacity, etc. This patient source should not be derived from episodic referral if the program is to assume continuing responsibility, if it is to teach principles of comprehensive and continuing care and principles of health maintenance. Therefore, the committee recommends seeking patient populations which will fulfill these criteria.

Appropriate facilities must also be developed to provide continuous comprehensive care to the populations served. An appropriate number of hospital beds must be allocated for the program with number and location dependent upon the geographical location and size of the population to be served.

### **Relationship Between Department of Family Practice and Other Medical School Departments**

#### **PATIENT CARE**

The family practice department must have a defined patient population (ultimately possibly several populations in different locales) for which it provides ongoing primary care. To the extent possible the housing for ambulatory care should be maximally convenient and accessible to the population served. An appropriate number of hospital beds should be available for the defined population and primary patient care responsibility should be assumed by the family practice staff for hospitalized patients. Other clinical department staff members should function as consultants to the family practice professionals in a similar manner to the consultative role carried out by specialists within communities.

Specific experience relating to special clinical areas in pediatrics, internal medicine, obstetrics and gynecology, psychiatry, surgery and emergency care, which are deemed valuable, necessarily must be arranged jointly with the department involved.

It will be important that this department not have responsibility as a sorting or clearing house for undefined patients referred to KUMC.

#### **EDUCATION**

It is essential that the department of family practice have a significant role in the undergraduate curriculum as well as in the graduate training program. It should play a vital role in student education intake in the areas outlined under Body of Knowledge and Technical Proficiency. Here it is anticipated its



efforts will be correlated closely with those of the basic science departments, the department of human ecology and the department of nursing as well as the clinical departments.

#### RESEARCH AND EVALUATION

Society is changing rapidly. Health and medical care needs and expectations and professional role relationships parallel this. The department of family practice must have a flexible conceptual base and a well constructed system for evaluation and detection of changing social and professional needs, internal patient service problems and educational delivery problems. It must be responsive *when* change is indicated. However, it must also be acutely sensitive to *where* change is indicated. It must develop a role of *leadership* rather than "followership" in planning and instituting change. Undoubtedly, with time it will project a prominent placement in health delivery systems, human behavioral and professional role evaluation and new development. Close reinforcing cooperative relationships with the clinical departments, the department of human ecology, biometry, and the computer center will accelerate this development.

#### Relationship With Communities, Community Health Professionals and Agencies

##### PATIENT CARE

The life blood of the department of family practice must come from the community. Patient populations enrolled to provide a service base for health profession student education must be representative of populations currently served and to be served in the future. Recognition by medical societies of the importance of this is essential. All socio-economic levels must be included in the defined populations to be used for the undergraduate and graduate educational base.

Ultimately, a variety of populations in different geographical settings should be served. To the extent possible *practicing community professionals* and other community *resources* (hospitals, etc.) should be intertwined in the service (and education) process.

To the extent possible service recipients should be encouraged to participate in planning and revision of service models.

##### EDUCATION

Active encouragement of participation by community professionals should take place by development of service models in which they can naturally function on a part time basis and through development of programs in which they can participate on a full time sabbatical leave from practice basis.

#### RESEARCH AND EVALUATION

The department of family practice must be sensitive to the potential existing within the private community for documentation of problems, expectations and experimentation with delivery modes. To the extent possible it should respond to interests expressed by practicing professionals in evaluation and new development by injection of technical assistance and other participation when desired.

Advisory Committee for Family Practice, University of Kansas Medical School: MISS MAUD ADAMS, DR. MAX ALLEN, DR. GEORGE BURKET, MR. MAC CAHAL, DR. ERNIE CHANEY, DR. EDWARD DEFOE, DR. JOHN HUFF, DR. KERMIT KRANTZ, DR. FRANK MASTERS, DR. HERBERT MILLER, DR. JESSE RISING, DR. HARRY STEWART, and MR. MILTON VANGUNDY.

### Health Education

(Continued from page 108)

sume that a single format can be developed which can be applied to the various institutions. Their characteristics differ too much for such rigidity. Each institution must inventory, evaluate and then develop its own responses dependent upon its strengths with the goal of supplementing or complementing the entire plan. Success depends upon a mutually harmonious acceptance of the objectives of the total program. A carefully designed step-wise development of first a program of continuing education for the staff, then institution of house staff education integrated with the medical school program, and finally, inauguration of undergraduate health education may be accomplished in a soundly prepared environment.

This scheme for expanding health and medical education in Kansas appears to be a promising one characterized by reasonable economic potential, and having the appropriate educational features or extending environment and involvement.

*Note:* This document was drafted by a special ad hoc committee as follows: DR. MAHLON DELP, *Chairman*, DR. NED SMULL, DR. JACK WALKER, DR. HERBERT MILLER, DR. WILLIAM RUTH, DR. ALAN THAL, DR. HARRY STEWART, DR. BROOKS GAVERT, DR. DAVID JENKINS, and DR. CIOMAR CONZALES.

A permanent extramural affiliations advisory committee has been established as follows: DR. JACK WALKER, *Chairman*, DR. MAHLON DELP, DR. HERBERT MILLER, DR. DONALD MILLER, DR. MARVIN DUNN, DR. KERMIT KRANTZ, DR. DONALD GREAVES, DR. ARTHUR CHERRY, DR. EARL SIFERS, DR. NED SMULL, DR. GEORGE MELLINGER, DR. CRAMER REED, and MRS. CAROLYN BROSE, R.N.

# Students and Family Practice

## *Student Activism Returns to Family Practice*

MILTON J. VANGUNDY,\* *Kansas City, Kansas*

THIS ARTICLE was written by a second year medical student at the University of Kansas Medical Center who was asked to review the change in attitude toward family practice that has manifested itself in the medical student body here at KUMC.

I arrived as a freshman medical student in September 1969 only to find that there were neither organized nor unorganized groups on campus whose expressed interest was family practice. Over the past 16 months there has been a notable increase in the number of students who have taken the responsibility upon themselves to become involved in various projects whose goals are to collectively stimulate the students' interest in family practice. One indicator of this interest is the roster of student affiliates to the Kansas Academy of Family Practice (KAFP). In September 1969 the number of such students was a mere dozen. By January 1971 the total number of student affiliates was 75, or about 15 per cent of the total medical student body. As a student affiliate, the medical student receives the monthly publication of the American Academy of Family Practice, the *American Family Physician*. He is eligible to hold a position on any committee of the Kansas Academy and he is encouraged to attend the local and statewide meetings of the Kansas Academy. In summary, he can be a highly active, although nonvoting, member of the Kansas Academy of Family Practice. Currently, only the Committee on Education has an active student member. He is James Barnes, who is also a sophomore student. In the near future a student will be invited to be active on the Drug Abuse Committee.

Procedural steps are currently underway to change the reading of the constitution of the KAFP so that this group of student affiliates will be recognized as a full-member, constituent district, as are the previously existing eight districts which cover the entire state. This district has representation to the board of directors of the KAFP. Three sophomore students, Milton VanGundy, Thomas Simpson and Louis Forster, currently share this representation by rotating their attendance to the various meetings. This serves as a good channel to keep the students aware

of the undertakings of this branch of organized medicine while at the same time re-exposing the practicing physicians to the current student world.

Over the past year, various numbers of students have taken advantage of the hospitality of the local district one of the Kansas Academy and have attended several different dinner meetings and programs which have been of interest to the students. These evenings of relaxation and cordialities have been enjoyed by physician and student alike. We hope to be able to entice the district one members to join us in the future for an evening here at the medical center.

The most ambitious program at this time is the Weekend Preceptor Program. In conjunction with the KAFP office in Winfield, Kansas, the students run a program which enables any medical student to visit a practicing family physician out in the state whenever the student has a free weekend. The purpose of the Weekend Preceptor Program is not to take the place of any pre-existing preceptorship, but to allow the student to see how a family physician practices and how he and his family live. The student stays with the doctor for two to three days and hopefully is able to see a somewhat representative practice. Ultimately, this program will expose the interested student to the various styles of family practice in various sized towns. The goal is to aid the student to make a decision about family practice for his personal way of life. Since this program's inception last May, nearly 20 different students have visited as many doctors in the following towns: Abilene, Atchison, Junction City, Salina, Minneapolis, Belleville, Lawrence, Topeka, Newton, Pratt, Heston, Wichita, Colby and Kansas City. Over 80 doctors in 50 cities have volunteered for this program.

Here at KUMC, students have also taken an active role regarding the newly-formed Department of Family Practice. Milton VanGundy is the student member on the Advisory Committee for Family Practice. This committee drafted *The Family Practice Concept—A Kansas Definition* and has just recently finished its role as a search committee for the chairman of the Family Practice Department. This committee will retain an advisory position for the new chairman throughout the coming year.

*(Continued on page 127)*

\* Second year medical student, University of Kansas Medical Center, Kansas City, Kansas.



# Rebels From Principle

## *The Philosophical Roots of Alienation*

EDMUND D. PELLEGRINO, M.D.,\* *Stony Brook, New York*

OURS IS THE FIRST epoch in which the customary rebellion of the young promises to become a true clash between cultures, a struggle of two classes based upon age, and a true metaphysical confrontation. The current schism in values and life styles between young and old is world wide, and it poses for the first time a clear challenge to a dominant culture from within that culture by those enjoying most of its benefits. The birth of a new culture is already announced in a literature teeming with apocalyptic and eschatological language.

Complete annihilation or complete capitulation are too often seen as the only viable alternatives to so fundamental a struggle. For the nonviolent and thinking among young and old, the consequence of the prevailing tension is a widespread affliction with alienation and anomie, a sense of mutual estrangement and a breakdown of common cultural forms. Personal and social inertia in overt and subtle ways afflicts many of us.

Are we to interpret the conflict optimistically as the renaissance of a new humanity, of the new man—already here according to Professor Reich of Yale<sup>1</sup>—or are we on the verge of another dark age of moral and social decadence and possibly the Spenglerian demise of this cycle of civilization?

For the purposes of this conference, I propose to look briefly at the philosophic roots of the conflict between young and old for two reasons. First, there is no dearth of social-psychological perspectives on the crisis. Second, I incline to the view that what young people believe and think—that is, the metaphysical bases for the positions they take—are too often ignored as determinants of behavior and too little regarded as points of engagement for some viable reconciliation, which is essential to a healthy future for all generations.

There are recognizable pretensions in such an undertaking by a physician who is neither a philosopher nor a psychiatrist. Yet, I hope some years of clinical observation of the effects of intellectual cat-

egories on behavior, together with many hours of intense discourse with the young on my own campus, will not be wholly discounted. I approach my task with the full humility required of a member of one of the embattled cultures when looking at the other.

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**I wish to emphasize that we are dealing with a question of *mutual alienation*, not *the problem of the young*. The same dilemmas in values and the same metaphysical questions face the older generation: Our own responses are no less confused and no less in need of examination.**

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I do speak unapologetically as an adult, but one who knows we cannot experience the world as the young do. I reject the adulatory stance of the pseudo-young who seek to recapture their own diminishing powers by an uncritical attribution to youth of greater idealism, courage, and purity of motives. I reject also those complacent dinosaurs of values who seek refuge in an echolalic reiteration of their own probity and who have written off the young as incapable of rational discourse.

My bias is already clear: I still believe that man is a reasonable being, that he must understand before he can act wisely, and that the only hope of elaborating a new value system more responsive to contemporary problems lies in an engagement of reason, enhanced by an equal understanding of the social and psychological peculiarities of adolescence, youth, and age.

Let us look first at the ontological crisis faced by both young and old and, then, inquire into its genesis in the modern dilemma about the transcendental and the utility of abstractive thought. From there, we can better examine the special flavor of the crisis in American culture and the possible alternatives to a cultural Armageddon.

### **The Crisis Is Metaphysical at Its Roots**

We are overwhelmed by analyses and explanations of the sharp discontinuities in the youth culture of today, all purporting to define the unique confluence

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\* Vice President for the Health Sciences; Dean, School of Medicine; and Director of the Center, State University of New York at Stony Brook.

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of influences which makes for the special nature of its problems and crises. Society has been transformed by a veritable vortex of events: the maturation of a technological, industrial, mass democratic society; the pervading presence of The Bomb; the wide distribution of affluence, television, and education; the threat of unbridled population growth; the prolongation of education and its stringent demands in a specialized society; the increasingly obvious spoliation of the environment; the demand of minorities for social justice; the waging of an unpopular war; the power of technology to overshadow man as well as enhance his powers; and, with it all, a rate of social change which amounts to a state of continuous revolution. It is understandable that these unprecedented tensions should induce responses and reactions in young people which result in alienation and anomie, joylessness and ennui, false hopes, and deep pessimism.

Understandable, too, are some of the confused and frustrated attempts of our young people to deal with these inordinate pressures: their rejection of the adult culture and the values which spawn such problems; their development of a counterculture of their own, distinguished by dress, drugs, rock, activism, and a freer life style. The young today are trying to build a culture deliberately antithetic to some of the more cherished ideals of their elders regarding sex, work, authority, the family, and purpose in life.

To some degree, these responses are exhibited by a very large number of our young people. While they are significant as political or cultural statements, they are underlaid by something more important—a metaphysic to accompany, founded in a cult of anti-reason, an utter rejection of any hope in arriving at truth by thought or science. This metaphysic rejects professional and technical expertise and, indeed, all knowledge except the subjective, as harmful to man. It casts all issues in terms of ideology, political power, or interpersonal relationships. There is no faith in the reality of things or of the world. Truth is to be found interiorly only, and formal education—that panacea of progressivist America—is seen as an instrument for the despoliation of the young. Reason comes in for special abjuration as the sacrilegious violation of the intuitive grasp of direct personal experience. Truth is to be sought only in uninhibited personal insights and expounded with all the righteousness of the evangelist in the name of humanity and love. Shades of gnosticism, seventeenth and eighteenth century Enthusiasm, and nineteenth century Romanticism!<sup>2</sup> Today, this metaphysic of feeling forms the basis of a revolutionary ethic, sometimes violently declared, and all in the name of becoming more human.

This Zarathustra-like rejection of reason is subliminally present in many of the well-intentioned youth movements today. To varying degrees, it pervades the consciousness of many of the middle-aged, as well.

We have here the most serious and most telling discontinuity with western culture—an exaltation of the visceral and sentient over the rational and the abstractive elements of human existence, a loss of faith and a failure of credibility in objective truth and in its apprehension except as a personal experience. Any attempt at a more fruitful dialogue with the youth culture and its over-thirty admirers must take this metaphysical stance into account. It underpins the positions they take on the fundamental questions of philosophy, the nature of the real, the nature of thinking, the nature of man and the ultimate. More important, it is the axiomatic basis for their action and behavior.

Coupled with this metaphysical nihilism there is, interestingly, a concomitant thirst for the transcendent, midst the alienating circumstances of modern life. Youth's growing rejection of traditional religious formulae is clear, but their religiosity belies the need for some reality outside man, even though their metaphysic of antireason seems, on the surface, to replace all the old forms. That acute observer of the young, Paul Goodman, has placed his hope in the inherent religious strivings of the young generation,<sup>3</sup> though it manifests itself now mainly as religiosity—an infatuation with drug rites, the superficial rather than the profounder features of Zen and Eastern cosmic religions, the lure of astrology, the beatification of Rock as a religious experience, the resurgence of witchcraft, the interest in psychic phenomena and the communal mysticism of Woodstock, and encounter groups.

While it is frenetic and bizarre at times, the search for the transcendent among the young has the virtues of genuine seeking and sincere involvement. It is more authentic than the all-too-common religiosity of the adult who accepts the forms of institutional religion while betraying in his behavior the values the existence of the transcendent might reasonably impose. Surely, we are not so presumptuous as to see greater worth in a dry *pro forma* Christianity without love than in the earnest probings of a young man into transcendental meditation. We are not speaking of absolutes, here, but only of the probity of motivations and desires.

For, in the midst of their brave searching and their sometimes arrogant posturings, young people are searching with the same intensity and desperation as Dmitri in his dialogue with Alyosha:



And as for me, God torments me. That's the only thing that's tormenting me. What if He doesn't exist? What if Rakitin's right—that it's an artificial idea produced by mankind? Then, if He doesn't exist, man is the ruler of the earth, of the universe. Magnificent! Only how is he going to be virtuous without God? That's the question. I always come back to that. For whom is man going to love then? To whom will he be thankful? . . . Rakitin says that one can love humanity without God. Well, only a snivelling idiot can maintain that. I can't understand it.<sup>4</sup>

A little further, Dmitri is still obsessed with the consequences:

But after all, what is virtue? . . . Virtue is one thing with me and another with a Chinaman, so it's a relative thing. Or isn't it? Is it not relative? A treacherous question! . . . I wonder now how people can live and think nothing about it.<sup>4</sup>

Dostoevsky has thus defined the terrible dilemma we face when we lose the sense of the transcendent or of God. Man is crushed under the enormous weight of his responsibility for himself and his fellows, unsupported by any source of love outside himself. Man knows his own history too well to be at ease with being "chief of the universe." Young and old alike struggle today with the need to deal consciously with the question of God. Some try to go on living and finding meaning in a self-determined ethic, like Camus and Sartre.<sup>5, 6</sup> Others eventually reestablish some other relationship with the transcendental outside the dogmas of traditional religions. A few deny the meaning of the question, but it resurfaces in time of distress. Everyone is today faced with the ponderous pressure to make some conscious choice.

The two philosophical deficits—the abolition of reason and the loss of the transcendental—are at the root of the pervasive sense of alienation which permeates the worlds of young and old today. For, without the influences and inhibitions of traditional religious forms, without a set of values outside of man, we are all terrifyingly free to make our own choices. We cannot retreat to the prepared position of one of a series of traditional religious value systems. We *must* make a choice which is personal, identified with our own actions, and authentic, since it is our own choice. We are at the place Sartre described for us when man makes his own values, and, as Sartre so well illustrated, this can be a joyless, absurd, and hopeless hell.<sup>6</sup>

For the young and adolescent, Dmitri's questions have a special poignancy. As Erik Erikson has perceived, they are in an intellectual "moratorium," poised between the morality of childhood and the need to fashion an adult ethics which they can identify as their own. They understand the need for

conscious choices better than we do. They know, too, that the adult faces these questions throughout his life. They are disappointed at our deviousness and at our flinching before a direct encounter with the ultimate questions.

The young recognize our diversionary tactics—entrancement with liturgy rather than theology and spirituality, guilt-relieving works without love, and immersion in the material while asserting the spiritual. Man is called today to achieve a new kind of emotional maturity based in a philosophical maturity—an accommodation to the fundamental questions, with or without the help of the transcendent and with or without the help of reason. The young must face these choices in their nakedness: Can we wonder at the personal alienation and the cultural anomie man experiences as a being dislocated from both God and reason in the maelstrom of today's world?

### Historical Roots of the Crisis

We cannot charge the young for the origination of the theologic and metaphysical wasteland with which they must contend. We and the Western world have bequeathed it to them. They have seized upon its nihilistic spirit because they see the monstrous dehumanizing events of the day as an outgrowth of our own inability to make the reasonable and the transcendent the source of good for mankind.

Two chains of conceptual history are pertinent here—one dealing with the philosophical origins of the death of God and the other with the death of metaphysics. Let us look at both very briefly.

We and the young stand today at the culmination of a chain of reasoning which has seriously undermined the idea of a transcendent reality outside man. The death of God seen as an historical event was prefigured in Blake and Hegel; was explored with sensitivity in *The Brothers Karamazov*; and intellectualized most forcibly by Nietzsche.<sup>7</sup> Most recently, Thomas Altizer has made the death of God an eschatologic and apocalyptic event, the essential starting point for a new religion and a new humanity.<sup>8</sup>

We cannot here analyze this fascinating conceptual chain, but a few words about Nietzsche's thought will reveal its great significance for our thesis. Nietzsche *had* to kill God to exalt man! He saw the transcendent as the only real threat to man, limiting his freedom, his will to power, and his absolute sovereignty. Religion for Nietzsche, as it was for Freud, was a device of the weak, a projection of the strength the weak man lacks. God must die or man cannot be reborn in the Dionysian image Nietzsche created for him.<sup>9</sup>

Nietzsche also had to abolish reason as the greatest error of man. He thus denied any possibility of metaphysics or abstractive thought. He then propounded a psychologistic epistemology, based in cognition limited entirely to man's bodily sensations. All values are thus arbitrary means to serve man's will to power. Indeed, he equates truth with power and survival. Limiting truth to sense data eliminates all universals and all deductive thought. Science, too, is an enemy which stifles feeling, dampens instinct, and is responsible for the decadence of mass culture. Scholarship is condemned, since it exalts thought over action and logic over life.<sup>9</sup> Nietzsche more than any other philosopher provides the theme which sustain the metaphysical positions on values, life, and the transcendent of the new culture affected by the young. Taken as an answer to the sad failings of traditional thought and theology to make a better humanity, they are understandable. Taken as the metaphysics of a new humanity, they are lethal for humanity itself.

Sartre picked up where Nietzsche left off and showed how absurd the life of man becomes when he pursues the impossible ideal of being God. When all values are made by the person, ethics is impossible, all relationships involve conflict, and all meaning outside the individual is impossible. He, too, made metaphysics impossible by equating ontology with phenomenology and thus deprived man of the uses of abstractive reasoning. Man's only fate was alienation, hopelessness, and a suffocating freedom for self which made contacts with other humans genuinely impossible.<sup>6</sup>

The headstone was placed on the death of the transcendent when theologians made the death of the traditional God of established religions a necessary condition to a rebirth of theology. The capstone on the death of metaphysics was placed by A. J. Ayers's *Language, Truth and Logic*, which identified philosophy with analysis of the language of science and denied it could ever deal with real things.<sup>10</sup> Ethics was easily reduced to the study of the study of the language of morals, and not morals themselves.<sup>11</sup>

Our young people have come into a world in which these were the dominant notes of philosophy. They perceive the real meaning and the consequences of the contemporary abnegation of the transcendent and of reason. Much of their culture and their behavior spring from these Nietzschean and Sartrean roots and the methodology of the linguistic analysts. Their recognition of the metaphysical challenges to modern man is clearer than that of our generation, whose ambivalent stance is always on the brim of hypocrisy.

## The Crisis in the American Context

There are some special features of the American cultural heritage which sharpen the philosophical crises faced by the young people of our day. Our country has been characterized by ambivalence in its stance on the transcendent and philosophy. Jefferson and Franklin, for example, were men of action with little respect or time for the speculative. They epitomized much of the American cultural stance—a combination of the pragmatic and the idealistic, of faith in the perfectability of man and the need for law and order, respect for religion with equal dedication to the secular. We have mixed ardent humanitarianism and respect for the entrepreneur, individualism with a dislike for those who are "too" different. In short, our history has been one of balance and oscillation between the sacred and the secular, between thought and action, and between the ideal and the practical.

We early became the hope of all who sought an earthly paradise. But the earthly paradise is now despoiled in the eyes of the young by racism, the Viet Nam war, pollution, the over-reverence for progress, technology, and the manipulation of mass opinion for selfish ends. Our ambivalence scandalizes the young, especially when they see so many moral and humanitarian issues that demand action for the good of all men. Without passing judgment on the validity of their charges, we can agree that young people have indeed been brought up in a world in which adults have vacillated between the venal and the ideal and have refused to recognize the growing ambivalence and dissolution of the American ideal.

Our American philosophers have, in addition, contributed to the demise of philosophy. William James opted for a philosophy of facts, action, and power as against dogma, artificiality, and the finality of truth. John Dewey urged that the modern age build a philosophy of the present which turned from the absolute and the eternal to the changing and the concrete. In his system, all values are created by man himself and chosen to enable him to survive. Dewey firmly rejects the notions of teleology and transcendental reality.

The American culture poses some special tensions for today's youth. Our belief in progress and "going it alone" unconsciously lead the young to attack even metaphysical problems the same way, without seeking help from either tradition or authority. Their elders fear usurpation of their authority, but also question their own failure to adjust to the pioneering spirit of the young. Americans still have an abiding faith in the future. They take the young more seriously and reject their ideas with more guilt than older, more cynical cultures. Young and old are



caught in a web of ambivalencies still to be resolved in our culture.

The whole flavor of these polarizations is intensified in the frame of the ethic of work and pleasure-postponement which still pervades American life. Indeed, this is one of the first value systems of our culture to be imbibed by many immigrants, who find its repudiation by their children to be particularly dangerous. It is also a convenient attack point for the counterculturists and the dropouts. Hippies, yippies, and street children are living out this contrariety in values between the young and the older generation.

It is difficult to assess the degree to which the failure to maintain the balance between the pragmatic and the ideal has contributed to the alienation of the young. It surely makes for anomie—that loss of cultural forms in which to channel expressions of feeling easily understood by those who participate in them. This lack of common cultural forms relevant to the problems of today accounts for the widespread anomie of young and old. It is as Biff says of his father in *Death of a Salesman*: “He had the wrong dreams. All—all wrong. . . . He never knew who he was.”<sup>12</sup> Perhaps the young have learned what we have yet to learn: that even the American dream must somehow satisfy the thirst for the limitless and transcendental. The young see the issue but deny the use of reason, the only tool suitable for the solutions. The old possess the tools but have not the courage to use them.

### Is There Hope for Reconciliation?

What can we anticipate in the future relationships of young and old, when the culture of each is so threatening to the other? Metaphysical conflicts are just as capable as the theological conflicts of old to generate violence as the only release from alienation, anomie, and despair. The cruder harbingers of an intercultural war were seen in campus riots and bombings, on the one hand, and the responses of police and “hardhats,” on the other.

Yet, both generations need each other. Both are in spiritual difficulties; both face the same metaphysical crises; and each can bring something valuable to the other. Indeed, the very real divergences in values and modes of thought which separate young and old can form the basis of a new interchange. I have emphasized the philosophical roots of the crisis, because it is at the intellectual level that the dialogue might best be initiated. How can we proceed?

We must recognize, first, that both generations are afflicted with the same demand to make a choice of values and meaning in a world in which help from the transcendent and from abstractive thought is nonexistent for so many. Yet, we must choose and

we must understand the implications of our choices and how they modify the positions we take and the behavior we manifest.

By laying bare the alternatives and “calling for the question,” the young have made us uncomfortable, indeed. We do not find them necessarily more honest, more charitable, or filled with more common sense. They do know the questions but lack the language of reason and orderly thought with which to answer them. We do them no service if we abandon reason and the search for reality and truth by affecting their intuitive, personalized style, as some have done in the hope of becoming “relevant” or identified with youth. Youth is right in asserting that we can never experience as they experience. But neither can they experience the world as we do.

The adult world must not defect from what it appreciates to be so: reality *demands* limits and discipline, even if God is dead and even if reason is debilitated. But, we must not make this a free assertion and hope to give it probity by virtue of our age, authority, or experience. Rather, we must be willing truly to engage the minds and hearts of the young. We must respect their wills and intellects as equipotential with our own. We must grant them their honesty and concede the frequency of our failures to be faithful to our own values. We can help them arrive at their own values only if we examine and reshape our own.

Little will be gained if we allow the peripheral manifestations of the philosophical rebellion to deviate us from its roots. We must be prepared to help those whose search for the transcendental has misfired in drugs, “dropping out,” brushes with the police, pregnancy, etc. If we can repress our scorn and practice some of the charity of which we talk, we can make better contact than by mimicking the life style and thought patterns of the young. Endless conversations have convinced me that the young have real disdain for the teacher who defects from his convictions to achieve popularity or to empathize, for the clergyman who defects from theology, the physician who is sympathetic but incompetent. Evidences of authenticity, taking a stance consistent with our actions, and willingness to expose our reasons for our positions are essential first steps for all of us.

The young, as Goodman has observed, have an extraordinary “metaphysical vitality” and a bent for religion which offers hope for contact with them.<sup>3</sup> They will accept no bogus versions and no traditional dogmas, prepackaged for their salvation. I do believe they will take seriously anyone who shares the same concern for the fundamental philosophical issues, who will work with them toward meaning

(Continued on page 132)



## Scans—Surgery—Autopsy

### *Correlation of Anterior Liver Scans and Exploratory Surgery With Autopsy*

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AUTOPSY SERIES have demonstrated that 33 to 36 per cent of patients with various malignant tumors have hepatic metastases.<sup>2, 6, 8, 10</sup> A correct diagnosis of hepatic metastases is critical, as in many cases this dictates whether medical management or surgical intervention is the treatment of choice. The presence or absence of liver metastases also significantly influences the patient's prognosis.

The purpose of this communication is to compare the accuracy of anterior liver scans using Au-198 colloid with surgical exploration and to compare both the scan and surgical findings with the autopsy specimen.

#### **Materials and Method**

Three thousand twenty-eight consecutive liver scans performed at the University of Kansas Medical Center from 1960 through 1965 were reviewed. This time interval was chosen because all the scans were performed using Au-198 colloid isotope. A single anterior projection was obtained with a 3- or 5-inch rectilinear scanner. Count rates, scanning speed, density, and other machine settings varied from patient to patient and were not recorded. The patients were

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A correct diagnosis of hepatic metastases is critical, as in many cases this dictates whether medical management or surgical intervention is the treatment of choice. The presence or absence of liver metastases also significantly influences the patient's prognosis.

The charts of 3,028 patients with liver scans were reviewed. The scans were performed in the anterior projection, using Au-198 colloid. From this group, 166 cases were found to have had an autopsy. In addition, 82 of the 166 patients had undergone exploratory laparotomy. The accuracy of anterior liver scans and exploratory laparotomy was correlated with the autopsy findings. In the group of 82 patients, the overall correlation between liver scan interpretation and autopsy findings was 82 per cent. The accuracy of liver scans specifically diagnosed as metastatic tumor proved to be 77 per cent. Exploratory laparotomy correctly identified metastatic disease in 86 per cent of patients.

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TABLE 1  
CORRELATION OF SCAN INTERPRETATION AND  
AUTOPSY FINDINGS IN 166 PATIENTS

<i>Scan Interpretation by Radiologist</i>	<i>Normal 60 PTS.</i>	<i>Met. Dis. 66 PTS.</i>	<i>Cirrhosis 22 PTS.</i>	<i>Non-specific 18 PTS.</i>
Autopsy Findings				
Normal .....	39	9	0	1
Metastatic disease .....	16	44	0	3
Cirrhosis .....	2	0	22	1
Non-specific .....	3	13	0	13

not physically examined by the radiologist, and the histories of the patients were limited to what was written on the isotope requisition by the attending physician. The charts of all patients were reviewed. Those patients who died and whose livers were examined at autopsy were selected. Patients on whom the scan was done more than four weeks prior to their death were excluded from the study. At autopsy, the liver was weighed, inspected, palpated, and sectioned at approximately 1.5 centimeters intervals. The liver was examined microscopically, and all diagnoses were verified histologically.

One hundred sixty-six cases fulfilled the above criteria. In addition, 82 of these cases had an exploratory laparotomy performed no more than four weeks before death and autopsy.

## Results

The results and correlation of the scans with autopsy findings in the larger group of 166 cases are depicted in *Table 1*. In 60 patients, the scans were interpreted as normal; at autopsy, the livers of 39 of these patients were normal. The other 21 had either metastatic disease or other nonspecific changes, including two with fatty metamorphosis and one with multiple hemangiomas measuring from 0.5 to 2 centimeters in size. The accuracy in this group was 65 per cent. The remainder of the 106 scans was inter-

preted by the radiologist as demonstrating an abnormal pattern. In this group, only ten patients had normal livers at autopsy, resulting in an accuracy of 90 per cent. Sixty-six of the scans were considered diagnostic of metastatic disease. At autopsy, 44 were found to have metastatic nodules. Eighteen scans were interpreted as nonspecific changes. In 22 cases, the liver scans were diagnostic of cirrhosis, and autopsy confirmed all of them to be cirrhotic.

The correlation between the scans and the findings at exploratory laparotomy in 82 patients are outlined in *Table 2*. In 34 cases, the scans were interpreted as normal; the surgical and autopsy findings in these patients are correlated in *Table 3*. *Table 4* presents the findings in 29 patients whose scans were diagnosed as metastatic disease.

*Table 5* summarizes the correlations between scanning, surgery, and autopsy in 82 patients. Thirty-four cases were thought to be normal on surgical exploration. At autopsy, 29 were normal. Four had metastatic nodules and one showed fatty metamorphosis. In one, the metastatic nodule was present posteriorly on the dome of the liver, two had small metastatic nodules deep in the liver parenchyma, while in the fourth the liver was infiltrated with metastatic adenocarcinoma. Thirty-one patients were thought to have metastatic disease at exploratory laparotomy. Autopsy confirmed this impression in 27

TABLE 2  
CORRELATION BETWEEN SCAN INTERPRETATION AND  
SURGICAL FINDINGS IN 82 PATIENTS

<i>Scan Interpretation</i>	<i>Normal 34 PTS.</i>	<i>Met. Dis. 29 PTS.</i>	<i>Cirrhosis 9 PTS.</i>	<i>Non-specific 10 PTS.</i>
Surgical Findings				
Normal .....	29	4	0	1
Metastatic Disease .....	3	25	0	3
Cirrhosis .....	2	0	9	0
Non-specific .....	0	0	0	6

TABLE 3

SURGICAL AND AUTOPSY FINDINGS IN 34 PATIENTS WITH A "NORMAL" LIVER SCAN

No. Patients	Surgical Findings	Autopsy Findings
26	Normal	Normal
2	Normal	Metastatic disease
1	Normal	Fatty Metamorphosis
2	Cirrhosis	Cirrhosis
2	Metastatic disease	Metastatic disease
1	Metastatic disease	Granuloma

TABLE 4

SURGICAL AND AUTOPSY FINDINGS IN 29 PATIENTS WHOSE SCANS WERE INTERPRETED AS DEMONSTRATING METASTATIC DISEASE

No. Patients	Surgical Findings	Autopsy Findings
23	Metastatic disease	Metastatic disease
2	Normal	Normal
2	Normal	Metastatic disease
1	Metastatic disease	Abscess
1	Metastatic disease	Primary tumor

cases. The four false positive cases had a liver abscess, a hepatoma, a hamartoma, and a granuloma.

The liver scan was interpreted as normal in 34 patients (Table 5). A few of these patients were different from the 34 patients thought normal at laparotomy. Of the 34 patients with a normal scan, 26 were verified at autopsy. Twenty-five of 29 patients had metastatic disease documented at autopsy. In two of these cases, the liver was found to be normal.

Discussion

The liver is one of the commonest organs involved by metastatic neoplastic diseases.<sup>6</sup> The identification of metastatic foci would strongly influence the method of treatment. A patient with distant organ metastases cannot be cured by treatment of the primary lesion alone, and only palliative therapy can be offered. Apart from clinical examination; liver function tests, needle biopsy, radioisotope scanning, selective celiac arteriography, and exploratory laparotomy

TABLE 5

CORRELATION OF SURGICAL AND SCAN FINDINGS WITH AUTOPSIES IN 82 PATIENTS

		NORMAL PTS.	MET. DIS. PTS.	CIRRHOSIS PTS.	NON-SPECIFIC PTS.
	SURGERY	34	31	11	6
	SCAN	34	29	9	10
AUTOPSY FINDINGS	NORMAL	29 26	0 2	0 0	0 1
	METASTATIC DISEASE	4 4	27 25	0 0	0 2
	CIRRHOSIS	0 2	0 0	11 9	0 0
	NON-SPECIFIC	1 2	4 2	0 0	6 7



can be used to obtain more information regarding the functional and anatomical status of the liver.

Liver function tests, while helpful, may be misleading.<sup>2, 3</sup> Frequently they fail to distinguish diffuse from localized disease and between these and ductal obstruction. Significant hepatic parenchymal damage has to exist before the liver functions are altered, and they may be normal in the presence of large areas of localized disease. Blind needle biopsy of the liver has a limited yield, and negative biopsy does not exclude the presence of metastatic disease.<sup>6</sup> There are a few contraindications to blind needle biopsy, and there is some associated morbidity and occasional mortality because of bleeding or bile leakage.

The accuracy of liver scans has been reported to be from 77 to 84 per cent.<sup>3, 5, 7</sup> However, in most of these studies, the histological confirmation was made either by needle biopsy or laparotomy, and in only a few cases was the liver examined at autopsy. *Table 1* shows that the scan was interpreted as abnormal in 106 of the 166 patients. At autopsy, 96 livers were found to be abnormal with a positive correlation of 90 per cent. If only the scans which the radiologist thought diagnostic of metastatic disease are considered, the proven accuracy at autopsy was 66 per cent.

In the group of 166 patients there was a 65 per cent positive correlation between scans interpreted as normal and the autopsy findings. The other 35 per cent of the cases had hepatic involvement from either metastatic disease, cirrhosis, or nonspecific disease processes. The neoplastic nodules in this group were generally less than 2.5 centimeters in diameter. Wagner noted that lesions less than 2.5 centimeters in size deep in the liver parenchyma and superficial lesions less than 1.7 centimeters in diameter are usually not detectable.<sup>4, 9</sup> The overall correlation between liver scans and autopsy findings in the 166 patients in our series is 78 per cent, which is comparable with other reports in the literature.

*Table 5* illustrates that exploratory abdominal surgery correctly diagnosed 86 per cent of patients with metastatic liver disease. The overall diagnostic accuracy with surgery was 89 per cent. Metastatic disease of the liver is missed during routine surgical inspection and palpation, because either the metastatic nodules are intraparenchymal and deep, or are located in inaccessible areas. Occasionally, nonmalignant lesions feel like metastatic nodules. In this same group of 82 patients, the liver scan correctly identified metastases in 77 per cent of patients and had an overall accuracy of 82 per cent.

The ability to recognize a space-occupying lesion on a liver scan depends upon an inability of the lesion to incorporate radioactive material. With a few exceptions, tumor, abscess, cyst, or granuloma

cannot be differentiated on scans. In cases of diffuse metastatic involvement, the scan may show diffuse, patchy decreased uptake simulating fatty metamorphosis or cirrhosis. Widening of the porta hepatis may suggest lymph node involvement while separation of the right and left lobes of the liver raises the possibility of carcinoma of the head of the pancreas.

Scans are very helpful for progressing the behavior of hepatic metastases as they respond to various chemotherapeutic agents. Scans are also useful in the follow-up of postoperative patients who initially had attempts at curative surgery.<sup>1</sup> Any change in subsequent postoperative liver scans is good evidence for metastatic disease.

Since 1965, Technetium sulphur colloid has been used in our laboratory for liver scanning with a rectilinear biplane scanner or gamma camera. Multiple views are obtained. Review of history and laboratory findings and examination of the patient by the radiologist are utilized in interpreting the scan and in giving the attending physician a written consultation. We are currently reviewing the material from 1965 to 1970 to see if diagnostic accuracy has improved.

## Summary

The charts of 3,028 patients with liver scans were reviewed. The scans were performed in the anterior projection, using Au-198 colloid. Autopsies had been performed on 166 cases from this group. In addition, 82 of the 166 patients had undergone exploratory laparotomy. The accuracy of anterior liver scans and exploratory laparotomy was correlated with the autopsy findings.

In the group of 82 patients, the overall correlation between liver scan interpretations and autopsy findings was 82 per cent. The accuracy of liver scans specifically diagnosed as metastatic tumor proved to be 77 per cent. Exploratory laparotomy correctly identified metastatic disease in 86 per cent of patients.

Liver scanning is of definite value in detecting metastatic disease. Because it is so innocuous, it is particularly useful in progressing patients who have had curative treatment for their carcinoma or in evaluating the response of metastases in patients under various suppressive therapeutic regimens.

## References

1. Baum, S.; Silver, L., and Vouchidas, D.: The recognition of hepatic metastases through radioisotope color scanning. *JAMA* 197:83-87, 1966.
2. Ferrier, F. F.; Hatcher, C. R.; Achord, J. L., and Abbott, V. A.: The value of liver scanning for detection of metastatic carcinoma. *The Am. Surg.* 35:112-120, 1969.
3. Gollin, F.; Sims, J. L., and Cameron, J. R.: Liver scanning and liver function tests, a comparative study. *JAMA* 187:111-116, 1964.

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# Prostatic Carcinoma

## *Changing Concepts of Therapy*

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PROSTATIC CARCINOMA is the second most common malignancy in the male, being second only to carcinoma of the lung. During the past 25 years, 6 per cent of all admissions to the Medical Center have been for cancer of the prostate. In the early 1940's, Huggins and Herbst discovered that this malignancy could be affected by Stilbestrol and orchiectomy. For the ensuing 20 years, the standard therapy was, therefore, either Stilbestrol, 5 milligrams per day, or orchiectomy. However, in 1960, the Veterans Administration Cooperative Study was undertaken to determine the actual effect of hormonal therapy and surgery on prostatic carcinoma. Patients were admitted into groups according to the clinical stage of the carcinoma and received either placebo, Stilbestrol, 5 milligrams per day, Stilbestrol plus orchiectomy, or surgery. Stage I carcinoma was defined as a malignancy incidentally found at the time of prostatectomy which was not clinically evident. Stage II prostatic carcinoma was a malignancy limited to the prostate. Stage III prostatic carcinoma was locally invasive carcinoma without distant metastasis and Stage IV was cancer with distant metastasis demonstrative by x-ray or elevated acid phosphatase. In 1967, they reported that Stilbestrol, 5 milligrams per day, was associated with a significant death rate from cardiovascular disease which negated any apparent tumor control when compared to a placebo. The deleterious effect of Stilbestrol has now been shown to be dose related, and the standard dose of Stilbestrol in treating carcinoma of the prostate should be 1 milligram per day, which will reduce the incidence of cardiovascular disease and death but will still control the carcinoma. Other groups have confirmed the adverse affect of high dosages of Stilbestrol on the cardiovascular system. Furthermore, the VA Cooperative Group could find no evidence that administrations of hormones prophylactically in patients with carcinoma increased their longevity and suggested that hormonal therapy be reserved for the patient when he develops symptoms. These suggested changes from the commonly accepted program of therapy of carcinoma of the prostate

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Carcinoma of the prostate is a significant medical problem in the State of Kansas and too often the patient is seen by his physician with advanced disease. The lay public must be made aware of the critical importance of a routine rectal examination to detect early carcinoma of the prostate. The treatment of prostatic carcinoma is dependent upon the stage and grade of the tumor as well as the patient's symptoms. A tissue diagnosis, therefore, must be obtained before instituting therapy. Except in the Stage I carcinoma of the prostate, we have not withheld hormone therapy but have usually given the patient 1 milligram of Stilbestrol even though the patient had minimal symptoms. We have reserved orchiectomy for those patients who are symptomatic with bone pain. This is contrary to the recommendations of the VA Cooperative Study, but we feel that with as 1 milligram dose of Stilbestrol, the cardiovascular complications will be minimized and with close observation can be treated. Unfortunately, it will take several years to determine whether this program of prophylactic Stilbestrol, does, indeed, increase the longevity of these patients. Stage II carcinomas, when low grade, should be treated with radical prostatectomy. Extensive and high grade lesions should be considered for cobalt irradiation. Stage III carcinomas, we have usually treated with 1 milligram of Stilbestrol and occasionally irradiation to the prostate. Obstructive uropathy should be treated by a transurethral prostatectomy. The majority of Stage IV carcinomas have been symptomatic and we have treated them with orchiectomy and Stilbestrol. Bone pain not responding to hormonal therapy should be treated by local radiation if at all possible.

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prompted us to review our own experience during the past five years. From 1965 to 1970, 300 patients were discharged from the urology service at the Medical Center with a diagnosis of carcinoma of the prostate. Two-hundred fifty of these patients were newly discovered carcinomas and their charts have been reviewed.

### **Stage I—Prostatic Carcinoma**

Fifty-one patients (20 per cent) with prostatism requiring transurethral prostatectomy or suprapubic prostatectomy were found to have prostatic carcinoma which had not been clinically apparent. The cellular pattern of the carcinoma was moderate to well differentiated in 90 per cent of these cases. Sixty-four per cent of the patients were given Stilbestrol; 11 per cent Stilbestrol and orchiectomy, but the remainder did not receive hormonal therapy. This reflects a change in our therapeutic program which we have instituted over the past two years. We feel that the elderly patient with a focal, well differentiated carcinoma of the prostate, should not receive Stilbestrol or orchiectomy but should be followed yearly with rectal examinations to rule out progression of the disease.

### **Stage II—Prostatic Carcinoma**

Fifty-six patients (22 per cent) were found to have Stage II prostatic carcinoma and 51 per cent of the patients presented with symptoms of prostatism. Only 23 per cent were admitted because of a suspicious prostatic nodule found on routine physical examination. Fifty-three per cent of all of these patients had moderate-to-well differentiated carcinomas. In reviewing the literature, numerous urologists have reported a significant 5 to 15 years survival rate with radical prostatectomy when a tumor is microscopically low grade and isolated to the prostate. Preferably, the size of the tumor should be 1 centimeter or less to achieve optimal results from radical prostatectomy. A tissue diagnosis can be obtained simply with a perineal or transrectal needle biopsy and the accuracy of this method has been reported to be between 70 and 97 per cent. It is a relatively simple method of obtaining a tissue diagnosis and can be repeated if the surgeon does not agree with the pathologist's report. We feel that if a patient has at least ten years anticipated longevity with a low grade carcinoma, which is less than one centimeter in diameter, that he should have a radical prostatectomy. Unfortunately, in the entire 56 patients, only three were found to be candidates for radical prostatectomy.

If a lesion is a higher grade and more extensive, the patient should be considered for cobalt irradiation to the prostate. The dosage is usually between 4,000 and 6,000 rads given over four to six weeks.

Generally, mild side effects such as diarrhea and dysuria occur with treatment. We have treated six such patients and five have responded by objective reduction in the size of the prostate. A repeated biopsy in two patient postirradiation failed to reveal any malignancy.

### **Stage III—Prostatic Carcinoma**

Fifty-seven patients (23 per cent) were found to have a Stage III prostatic carcinoma. Forty-six per cent of these patients presented with symptoms of prostatism but 35 per cent also presented with the primary symptom of perineal pain and dysuria. Only 8 per cent were found to have prostatic carcinoma on routine physical examination. Seventy per cent of these patients required transurethral resection to improve their voiding pattern and only 39 per cent of the carcinomas were microscopically moderate-to-well differentiated. Thirty per cent of these patients were treated with Stilbestrol and 36 per cent with Stilbestrol and orchiectomy. In general, those patients who were symptomatic and responded to hormonal therapy had moderate to well differentiated tumors. Fourteen patients were treated with cobalt irradiation to the prostate and 12 responded by a decrease in the size of the prostate and a reduction in perineal discomfort. Those patients responding to irradiation again had poorly differentiated carcinomas.

### **Stage IV—Prostatic Carcinoma**

Eighty-six patients (56 per cent) were found to have carcinoma with bony metastasis. Sixty-one per cent of these patients presented with symptoms of bone pain, 16 per cent with prostatism, and 12 per cent with hematuria. Only two patients were found to have prostatic carcinoma on routine physical examination. Fifty-three per cent required transurethral resection of the prostate to improve their voiding pattern and a tissue diagnosis was obtained in the rest by prostatic needle biopsy. Sixty-three per cent of these patients had poorly differentiated carcinoma. Seventy per cent of the patients had orchiectomy and Stilbestrol, 14 per cent had Stilbestrol and 67 per cent orchiectomy. Relief of bone pain was usually noted shortly after the institution of hormonal therapy if the tumor was hormone sensitive. Twenty-one of the patients who did not respond to hormones were given irradiation to specific areas of pain. The irradiation was given as a single dose in some cases and in others for as long as three weeks and was usually given on an out-patient basis. All patients responded with relief of pain ranging from a few to several months. Six patients received cobalt irradiation directly to the prostate to control the pain or bleeding and four of the six responded well.

# Proctoscopy—A Routine Procedure

## *An Experiment in Updating Proctoscopic Techniques*

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ON MARCH 3-6, 1970, and April 21-24, 1970, the Kansas Circuit Course was presented in Manhattan, Hutchinson, Arkansas City, Emporia, Concordia, Colby, Garden City, and Great Bend. As part of the program there was a session on proctoscopy that centered on a training film made by Dr. Arthur Klotz and the Division of Cinematography of the KUMC Department of Communication Services with the financial support of the Kansas Regional Medical Program (KRMP).

Since the topic selected was on proctoscopy, questions immediately came to mind as to why the procedure is not routinely used in the physician's office. These seem obvious (1) a separate room, (2) expensive equipment, (3) nursing helps, (4) sterilization, and (5) interruption of busy patient appointment schedules. An initial questionnaire was then circulated to 500 physicians in the state by KRMP asking a few key questions such as the number of examining rooms, and nursing help. This questionnaire response indicated that a special movie employing some new approaches to the proctoscopic examination might be made to show at the Circuit Course.

At the time the program was presented, Dr. Klotz asked the audience to indicate by anonymous questionnaire whether they intended to make any of the recommended changes in their examinations as a result of viewing the film. The response was encouraging.

A second follow-up questionnaire was sent to 189 doctors who had attended the March and April sessions on July 1, 1970. These questionnaires each bore the name of the doctor and asked the following four questions:

1. Did you indicate on the evaluation sheet that you intended to make changes in any way in performing proctoscopy?
2. Have you actually made any changes in doing proctoscopy since the Circuit session?
3. Were you satisfied with the changes?
4. If you did not make changes, do you intend to?

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Of those receiving the questionnaires, 113 responded. There were 113 replies of which 34 were from those who remembered having indicated on the earlier occasion that they intended to make a change; 45 had not so indicated; and 26 could not recall how they had responded. This is a hazard in anonymous replies.

Table 1 shows the way the four questions were answered. Twenty-five of the 34 who had intended to make a change had done so, and 20 of these indicated satisfaction at the results. Five did not indicate either satisfaction or dissatisfaction. Three of the 45 who had not indicated an intention to change had actually made a change, and all three were satisfied. Six of the 26 who could not recall their earlier response had made a change, and only one of these did not express satisfaction. His response was: "Cannot get as good a view with recommended scope as with regular scope."

TABLE 1				
	Num- ber	Made Change	Sat- isfied	Dissat- isfied
Indicated intention to change . . . . .	34	25	20	0
No intention to change . . . . .	45	3	3	0
Did not remember . . . . .	26	6	5	1
Total	105	34	28	1

Those who had made a change indicated the following changes:

- "Adapting course for permanent records."
- "New equipment."
- "Different equipment."
- "Doing more and should do more yet."
- "Do stat proctoscopy exams frequently as indicated."
- "More thorough and check hemoglobin up with x-ray now."
- "More frequent."
- "Positioning and use of disposable equipment."



"Do not require a full prep for the patient. Do not force sigmoidoscope up the full 16 centimeters. Go up as far as discomfort allows."

"Using disposable sets."

"Positioning of patient."

"Newest fiber optic proctoscopic installation and Ritter table."

"Did sigmoidoscopy without previous preparation."

"Suction is superior to those damn swabs."

"Turning the patient end for end on the table and elevating the end of the table works fine."

"Practiced a disposable proctoscope."

"Doing proctoscopy in office."

"Not persistent in going so far as to hurt the patient. Also using new type proctosigmoidoscope."

"I have purchased the portable addition to the examining table."

"Will have disposable equipment."

"Patient does not need to be prepared."

"Ordered disposable sigmoidoscope—attempt endoscopic exam without enemas, etc."

"Use illuminated disposable proctoscope."

"Being a little more thorough in my search."

"Have had hospital get some of the disposable equipment."

"Disposable scope."

The comments of eight who had not made changes but intended to follow:

"More frequent exams."

"Ordered equipment and have not received as yet."

"Use disposable equipment. Has been ordered but not used as yet."

"Change of equipment—both hospital and office."

"Planning to get a folding leaf for table top for sigmoid."

"Intend to obtain disposable sigmoidoscope and do them routinely."

"Office procedure for proctoscopy."

Since the Circuit Course, Dr. Klotz has made a complete 10-minute training film on proctoscopy which shows new techniques and modern, disposable equipment. He will make this film available on loan to interested groups. The film is part of a teaching block of three components. One or all three components can be used. One component is a detailed color-sound movie of all steps for performing proctoscopy using institutional equipment and a special room. The purpose of this film is to teach students and residents how to use the equipment simply and properly, and how to make the procedure simple, quick, and non-painful to the patient. This film can be viewed by an intern or resident just before he brings the patient to the proctoscopic room so that the examination can be done comfortably, quickly, and neatly without prior experience by the physician in the proctoscopy suite.

A second component for students is audio-tape

synchronized with 35mm stills of the movie, explaining in detail the steps of the procedure so that each student can view these at his leisure or just prior to attending his first examination. These stills in color with sound are on a carousel projector nearby and can be reviewed in 15 minutes.

The third component is a color sound movie that demonstrates the use of simple disposable equipment for office use for the young physician just entering practice or for the physician already in practice who is not equipped to do routine examinations.

## Students and Family Practice

(Continued from page 114)

Thus, we hope it can be seen that student interest and participation has risen substantially in the last two years. All of us who are actively involved hope to see this trend continued in the future. We do not wish for a regressive swing back to the time when 80 per cent of all graduating medical students entered directly into primary care, but we do wish for positive programs which would enable the student who arrived at medical school with a strong leaning toward family practice, to retain that feeling and, in fact, to even be encouraged to enter this style of practice.

## Scans-Surgery-Autopsy

(Continued from page 123)

4. McAfee, J. G.; Ause, R. J., and Wagner, H. F., Jr.: Diagnostic value of scintillation scanning of the liver. *Arch. Int. Med.* 116:95-110, 1965.

5. Nagler, W.; Mender, M. A., and Balu, M.: Radioisotope photoscanning of the liver. *Gastroent.* 44:36, 1963.

6. Ozarda, A., and Pickren, J.: The topographic distribution of liver metastases, its relation to surgical and isotope diagnosis. *J. Nucl. Med.* 3:149-152, 1962.

7. Rajan, K. S.; Tikare, S. K., and Tandon, B. N.: Evaluation of some laboratory aids for diagnosis of metastatic malignancy of the liver. *Indian J. Med. Res.* 52:142, 1966.

8. Saterlee, R. C.: Primary site of cancer of liver, lungs and bones. *U. S. Naval Med. Bull.* 40:133, 1942.

9. Wagner, H. N., Jr.; McAfee, J. G., and Mozley, J. M.: Diagnosis of liver disease by radioisotope scanning. *Arch. Int. Med.* 107:324-328, 1961.

10. Willis, R. A.: *The Spread of the Tumor in the Human Body*. St. Louis, C. V. Mosby Co., 1958.

## ADVERTISING

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# Brittle Diabetes

## *The Problem of the Brittle Diabetic*

ROBERT E. BOLINGER, M.D.,\* *Kansas City, Kansas*

BRITTLINESS or lability in the diabetic state is difficult to define in any concrete terms and yet every physician who must treat diabetic patients intuitively becomes aware of this characteristic in certain subjects. In general, the term brittleness refers to a diabetic in whom the margin between manifestations of hypoglycemia and those of hyperglycemia are in close proximity and difficult to steer between. Such a definition implies immediately certain arbitrary criteria for the definition of hypoglycemia and hyperglycemia. Hyperglycemia, in particular, represents a variable which changes throughout the day between the feeding and fasting state (*Figure 1*). Aside from the fact that these values shown are statistically those of normal individuals, it does not necessarily follow that they have any very close relationship to the welfare of the diabetic patient. Aside from the diuretic effect of hyperglycemia, most authors have been wont to ascribe any untoward effects to high blood sugar levels. The demonstration of the severe impairment of central nervous system function resulting from the hypertonicity has prompted a new look at allowable upper limits for glycemia.<sup>1</sup>

Hypoglycemia, on the other hand, has been more or less rigidly defined and set at a given blood sugar level. The variability of response in terms of symptoms and signs in patients at various blood sugar levels, though, is quite broad and conditioned by a number of factors. Theoretically, there are three possible states of regulation for a diabetic patient (*Figure 1*), but none of these can be considered as characteristic of brittleness and only when there are rapidly alternating periods of hyperglycemia and apparent hypoglycemia can we apply this definition (*Figure 1*). In this theoretical scheme, the regulated diabetic is shown as not having an absolutely normal curve of glycemia, since it is doubtful that the normal physiological state is ever attained, even in the best regulated diabetics. The brittle state is indeed a manifestation of perhaps a number of different dynamic patterns among diabetics. While not providing a ready formula for the solution to this problem,

an understanding of the dynamics involved supplies the physician with some security in the management of such patients. Brittleness in diabetics is too often an unmanageable situation and rarely purely a matter of regulation. Brittleness most often becomes apparent to the patient through symptoms of hypoglycemia and it is this symptom which most commonly drives these patients to the physician. The typical patient of this type is one who has had dia-

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**Lability or brittleness in the diabetic patient calls attention to four contributing factors: (1) regulatory factors, (2) homeostatic factors, (3) factors of energy intake and expenditure, and (4) altered threshold to manifestations of hypoglycemia. Two common regulatory problems are related to midday hyperglycemia and late night hyperglycemia. Prolongation of insulin effect through renal disease or antibody binding of insulin must be considered. Variable energy expenditure is best handled by a sliding scale of diet intake. Altered threshold to hypoglycemia is seen in long standing diabetics and demands that regulation be carried out at higher blood glucose levels.**

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betes for a number of years, but suddenly notes a change in the type of hypoglycemic reactions and most typically appears after about 10 to 15 years of the disease.<sup>3</sup>

The onset of these manifestations is the final result of a progressive deterioration in insular function to the point of total diabetes, thereby leaving a patient who lacks any form of internal control from the standpoint of insulin and who is totally dependent upon exogenous insulin.

Though the onset of total diabetes may well represent the final deterioration in pancreatic function in the patient, it is also the point at which many other factors that contribute to a fluctuating blood sugar become apparent. These factors may be broadly

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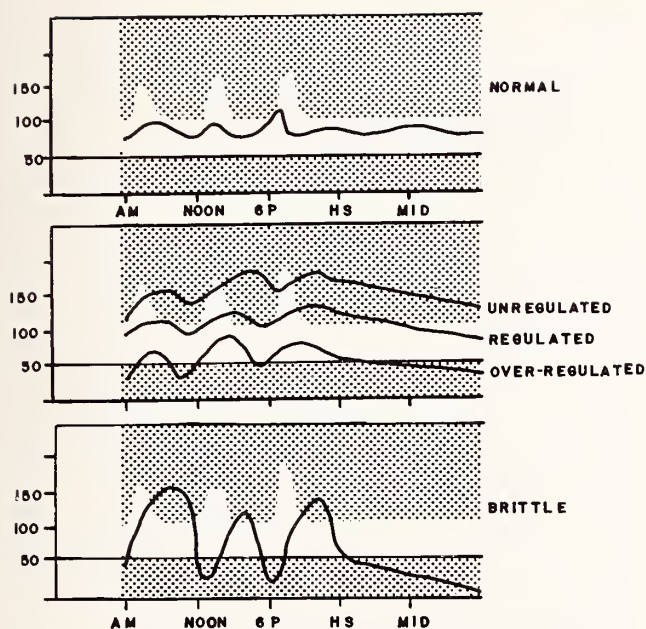


Figure 1. Allowable glycemic limits are shown in the clear area. In the upper frame an ideal blood glucose curve is shown throughout the day. In the center frame the blood glucose curve is shown for various states of regulation. In the bottom frame is shown the curve for "brittle diabetes."

categorized as follows: (1) regulatory factors (2) homeostatic factors (3) variations in energy requirement (4) altered threshold to the manifestations of hypoglycemia.

### Regulatory Problems

The simplest problems are those related to variations in timing and duration of insulin. The administration of insulin parenterally to a diabetic patient can hardly mimic very closely the situation which naturally occurs in the non-diabetic upon the ingestion of carbohydrate whereby plasma insulin rises immediately, peaks at about one hour and is back to basal levels at two hours. Certainly even short-acting insulin given at the time of ingestion of food cannot faithfully reproduce this type of a curve.

The majority of mild diabetic patients can be regulated satisfactorily on a single dose of NPH or Lente insulin each day. This is particularly true of those taking insulin in the low dosage range below 25 units. As the requirement for insulin increases, though, certain individual variations in the response become apparent. The first and most common manifestation of this irregularity is a failure to satisfactorily control hyperglycemia during the middle part of the day, with attendant hypoglycemic reactions in late afternoon and again at night (Figure 2). Any further increases in NPH insulin to control the mid-day glycemia are accompanied by a worsening of the hyperglycemic reactions occurring later in the day.

This is best treated by the substitution of a certain amount of the NPH insulin by regular insulin given simultaneously in the morning.

A second common regulatory abnormality is associated with an apparent shortening of the NPH effect such that glycemia does not seem to be covered in the late night and early morning hours (Figure 2). In these situations there is a hyperglycemia, often with acetonuria present in the morning, and further increase in NPH insulin is associated with reactions occurring in the late afternoon and evening. Two possibilities must be considered in such patients with regard to the question as to whether the hyperglycemia is appearing sometime during the middle of the night and continuing until arising or whether it is simply a hyperglycemia which is appearing rather

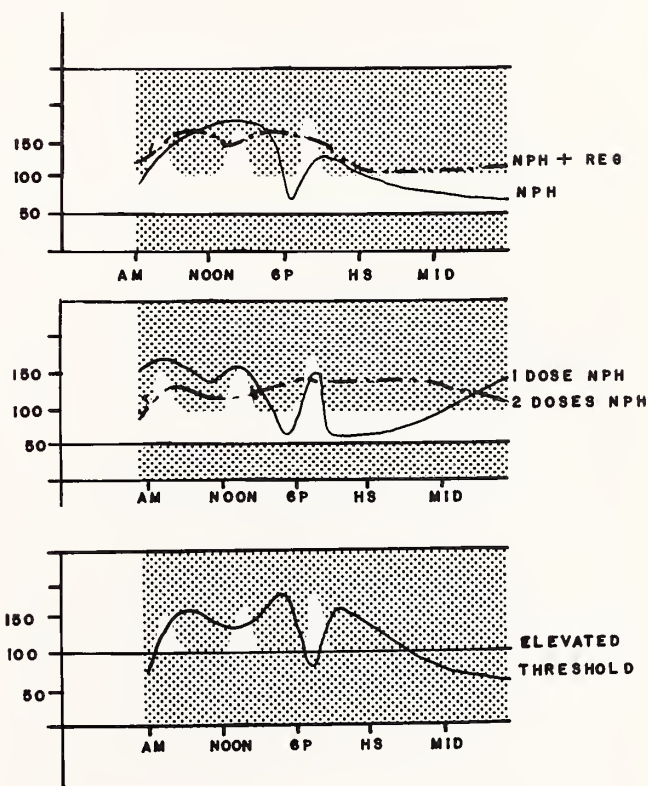


Figure 2. The solid line shows the unregulated state and the broken line the improved control. In the upper frame is the curve for high midday glucose levels and in the center frame for high early morning levels. The bottom frame shows the effect of an elevated threshold for hypoglycemia.

abruptly at about the time of arising. A differentiation between these two situations can best be determined by a night collection of urine. If it is found that very little glycosuria has been occurring during the night then the rise in blood sugar is probably only occurring about the time the patient arises. In this case it is often occurring as a rebound from hypoglycemia existing during sleep. This Somogyi effect<sup>4</sup> is best treated by giving a late evening feed-

ing and substituting morning NPH with some regular insulin. On the other hand, if it is found to be associated with a large amount of glycosuria during the night, then insulin coverage must be augmented for the late night period. There are two possible ways in which this may be handled:

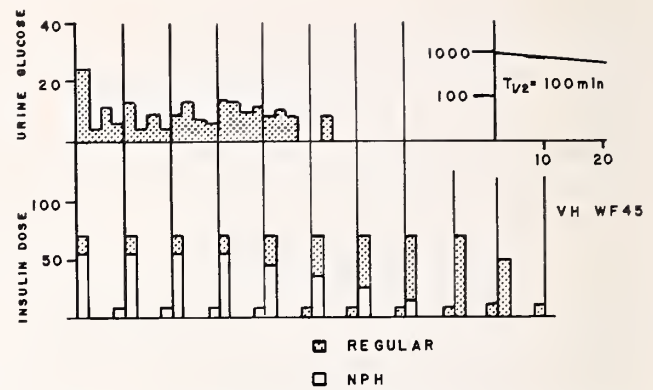
1. It may be convenient to simply add a longer acting insulin to the patient's NPH or Lente insulin regimen. The one advantage to the use of Lente is that a certain amount of Ultra-Lente can simply be substituted.

2. Often, though, if the patient is requiring fairly large doses of insulin, this simple dose does not allow a sufficient degree of control throughout the full 24-hour period. For that reason, it is considered much more effective to add a small dose of NPH insulin in the evening at about 6:00 p.m. and in most situations to subtract an equal amount from the morning NPH. The evening dose in most cases is quite small, being in the range of 5-10 units (*Figure 2*).

A certain number of patients, however, continue to show brittleness and instability on either of these two regulatory modifications. The possibility of a radically altered handling of insulin in the body must then be considered. Some light may be thrown on this problem by studying the kinetics of insulin in patients as the disappearance of  $I^{131}$  labeled insulin from the plasma.<sup>5</sup> A prolongation of insulin disappearance of 10-20 minutes after injection is a reflection of abnormal delay in insulin effect. This delay is a result of either abnormal binding of insulin to plasma antibodies<sup>6</sup> or retardation of insulin catabolism secondary to chronic renal disease.<sup>7</sup> A study of these patients reveals that when a single dose of regular insulin is given, the average time of appearance for insulin reactions is 11 hours following the injection, which is far prolonged beyond the effect which would be expected from regular insulin under normal circumstances. Such a delay, then, would seem to indicate that regular insulin is functioning more like isophane insulin in these patients. For that reason, the patients showing prolonged effect are best regulated on schedules making use of a greater proportion of regular insulin (*Figure 3*).

### Homeostatic Abnormalities

Abnormalities of the various other endocrine factors in the body important in the regulation of glycemia may contribute to a labile state (*Figure 4*). Classically the pituitary gland with its production of growth hormone represents a major homeostatic mechanism in the control of the blood sugar and a defense against hypoglycemia. Hypopituitarism resulting from surgery or disease in very brittle dia-



*Figure 3.* Improvement in regulation is noted for a patient with a prolonged insulin disappearance ( $T_{1/2}$ ) when regular insulin is substituted for NPH.

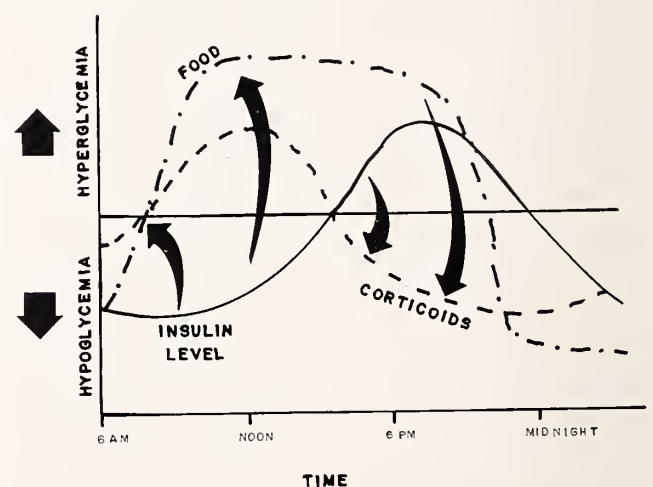
betics, while markedly decreasing the total insulin requirements, does little to alter the degree of brittleness in the patient.

The same comments may be made essentially about Addison's Disease whether it be induced by surgery or disease.

The autonomic nervous system plays an important role in the homeostasis of the blood glucose. In this respect, rare cases of "brittle diabetes" are encountered which in effect are due to pheochromocytomas. The opposite situation, a loss of autonomic response, can be seen in diabetic neuropathy and may result in a type of insulin reaction which is different in that the patient lacks the usual adrenergic warning signs of hypoglycemia.

### Variations in Energy Metabolism

Another factor contributing to lability in the diabetic is related to variable intake or utilization of



*Figure 4.* The solid line shows a glycemic curve for a brittle diabetic. Dotted lines show varying effects of food intake and adrenal corticoid function throughout the day.

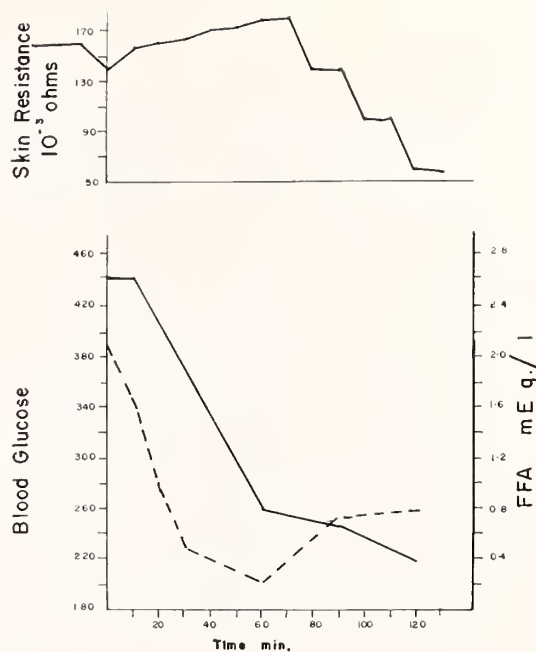


glucose. Variation in intake may be seen in any type of gastrointestinal disease in which malabsorption results, and for that reason may become a rather prominent part of diabetic neuropathy where the viscera are involved. Such changes may become apparent in individuals who intermittently take laxatives.

A second category in this group may be represented by those showing a variable expenditure of energy, particularly in young individuals with variable exercise for the day or in individuals with seasonal work dependant upon the weather. Such patients have a tendency to regulate their diabetes by either increasing or decreasing their insulin, depending upon their expected energy requirements. This, however, is usually not successful and is better handled by a sliding scale of diet, rather than sliding scale of insulin. The effects of emotional disturbance on the diabetic regulation are well known and are particularly apparent in the young female. Intercurrent disease of any type, particularly neoplasm or infection, must be thought of in the individuals showing an increased amount of lability.

### Altered Threshold to Hypoglycemia

The manifestations of hypoglycemia may occur at a glucose level somewhat higher than the conventionally defined hypoglycemia level of 50 milligrams per cent. We are impressed with the fact that the symptoms of hypoglycemia, or indeed symptoms of a bizarre nature relieved by the administration of glucose, frequently occur in patients where the blood sugar level appears to be normal or high, although in most instances it is falling at the time of these reactions. Since the autonomic manifestations of an insulin reaction contribute mostly to the symptoms which are seen, we studied autonomic response during hypoglycemia in a group of patients. For this purpose we utilized the galvanic skin reflex<sup>8</sup> which is known to show a marked decrease in skin resistance during sympathetic stimulation. Normally hypoglycemic insulin reaction is attended by a drop in skin resistance which reaches its nadir at 40 minutes and returns to normal at one hour. Some individuals with the high blood sugars also show the same drop in skin resistance after insulin as do the normal individuals at hypoglycemic levels, even though actual blood sugar level is not in the hypoglycemic range. In *Figure 5* the insulin reaction in a diabetic patient is heralded by a drop in the skin resistance, although the blood glucose never drops below 220 milligrams per cent. It would appear, then, that the symptoms of an insulin reaction can occur in diabetic individuals at high blood sugar levels. Most of the diabetics in this category are individuals with



*Figure 5.* The lower curve shows the response of glucose (solid line) and the free fatty acids (broken line) to the injection of insulin. The upper frame shows the drop in skin resistance occurring while the blood glucose is still elevated.

diabetes of 10 to 15 years' duration and have extensive vascular disease. The possibility must be entertained here that certain segments of the cerebral circulation may be somewhat hypoglycemic at the same time that the systemic blood sugar is elevated in a situation and analogous to the experimental model in monkeys reported by Meyer and Portnoy.<sup>9</sup> We have seen a number of patients with this problem who have eventually proceeded to develop frank cerebral infarcts (*Figure 6*) when diabetic regulation was attempted at lower blood sugar levels. It would seem that localized vascular disease in the cerebral circulation, often involving the basilar artery system, poses itself as an excellent explanation for the manifestations of "insulin reaction" at higher blood sugar levels.

Such neurologic manifestations may take the form of seizures and should be considered in individuals showing insulin reactions of a sudden precipitous nature, since hypoglycemia involving an ischemic area of the cortex may well give rise to a seizure manifestation. These patients are often controlled by the administration of anticonvulsant drugs, although no change is produced particularly in their glycemia.

The problem of brittleness remains unsolved in any patients where even attempted regulation in the controlled environment of the metabolic ward leads only to a very poor degree of control. Attention to the factors outlined above can result in improved control in many patients.

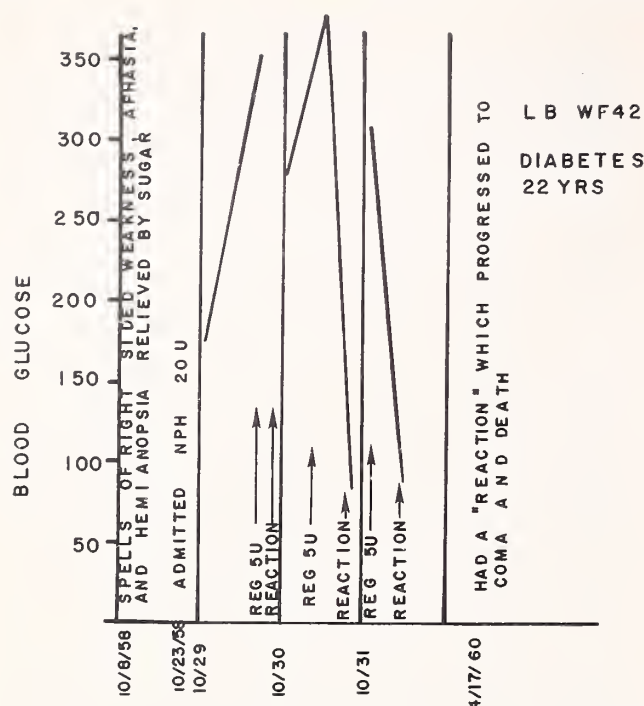


Figure 6. The course of a diabetic patient who developed transient focal neurologic deficits relieved by glucose is shown. Eventually a frank infarct developed.

## References

1. Danowski, T. S., and Nabarro, J. D. N.: Hyperosmolar and other types of nonketotic coma in diabetes. *Diabetes* 14:162-165, 1965.
2. Joslin, E. P.; Root, H. F.; White, P. and Marble, A.: *The Treatment of Diabetes Mellitus*, Tenth Edition. Philadelphia, Lea and Febiger, 1959, p. 215.
3. Balodimos, M. C., and Root, H. F.: Hypoglycemic insulin reactions without warning symptoms. *J.A.M.A.* 171:261-266, 1959.
4. Somogyi, M.: Exacerbation of diabetes by excess insulin action. *Diabetes* 9:328-330, 1960.
5. Bolinger, R. E.; Morris, J. H.; McKnight, F. G., and Diederich, D. A.: Disappearance of I-131 labeled insulin from plasma as a guide to the management of diabetes. *New Eng. J. Med.* 270:767-770, 1964.
6. Lennon, E. J.; Engbring, N. H., and Engstrom, W. W.: *In vivo* studies of insulin binding antibody. *Clin. Res.* 8:242, 1960.
7. O'Brien, J. P., and Sharpe, A. B., Jr.: The influence of renal disease on the insulin I-131 disappearance curve. *Metabolism* 16:76-83, 1967.
8. Bolinger, R. E.; Stephens, R.; Lukert, B. P., and Diederich, D. A.: Galvanic skin reflex and plasma free fatty acids during insulin reactions. *Diabetes* 13:600-605, 1964.
9. Meyer, J. S., and Portnoy, H. D.: Localized cerebral hypoglycemia simulating stroke. *Neurology* 8:601, 1958.

## Rebels From Principle

(Continued from page 119)

and for a set of values equal to the enormously terrifying challenges we face together.

Youth is, after all, a temporary state, though a prolonged one today.<sup>13</sup> Even a youth culture must

face the question of maturation and the realization that meaning does not lie in pharmacological prestidigitation, the decibel ratings of a rock group, or the population statistics at Woodstock. Nor does it lie in the complacency and stasis of suburbia, in the deadening of reflexes for justice and charity occasioned by a surfeit of beer and television.

Both generations suffer from alienation from life and anomie with respect to contemporary culture and each other. We must thank the young for calling the adult world to task for escaping from the most human of issues; we can thank the old for helping the young to see the pathology of a Dionysian existence. Perhaps, in this way we can reset the balance between the practical and the speculative, the ideal and the actual, the present and the future, the young and the old. To expect the emergence of a new humanity based in the triumph of the presumed superiorities of the young is to hope for a romantic postapocalypse without reference to the real. Instead, we can hope for the fusion of the virtues of both generations in a set of values and practices more consistent with today's world and more responsive to the needs of all men.

## References

1. Reich, Charles A.: *The Greening of America*. New York, Random House, 1970, 399 p.
2. Knox, Ronald A.: *Enthusiasm: A Chapter in the History of Religion*. New York, Oxford University Press, 1961.
3. Goodman, Paul: *The New Reformation*. *New York Times Magazine*, September 14, 1970.
4. Dostoevsky, Fyodor: *The Brothers Karamazov*. New York, The Heritage Press, 1949, 459 p.
5. Camus, Albert: *The Rebel*. New York, Vintage Books, 1961.
6. Sartre, Jean-Paul: *Being and Nothingness*. New York, Philosophical Library, 1956.
7. Nietzsche, Friedrich: *Thus Spake Zarathustra*. New York, The Heritage Press, 1967.
8. Altizer, Thomas J. J.: Theology and the Contemporary Sensibility, in William A. Beardslee, ed., *America and the Future of Theology*. Westminster Press, 1967, 15-31.
9. Gerber, Rudolph: Nietzsche: Reason as Power for Humanism. *Philosophy Today* 12, 2:75-92, 1968.
10. Ayer, A. J.: *Language, Truth and Logic*, 2nd edition. New York, Dover Publications, 1936.
11. Hare, R. M.: *The Language of Morals*. New York, Oxford University Press, Galaxy Books, 1964.
12. Miller, Arthur: *Death of a Salesman*. New York, The Viking Press, 1949.
13. Kenniston, Kenneth: Youth: A "New" Stage of Life. *American Scholar* 39, 4:631-654, 1970.

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# Burn Treatment Advances

## *Major Advances in Burn Therapy*

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SIGNIFICANT ADVANCES in the management of thermal injuries have occurred in five major areas during the last 20 years. The first major advance developed by Cope, Evans, Moyer and others was the better understanding of the physiology of burn shock at the cellular level with a rapid shift of body fluids into the extracellular space, which emphasized the necessity for rapid replacement of this loss with both balanced salt and colloid solutions. Methods of calculating the percentage of body surface burned, and guideline formulae for determining the fluid replacement based upon the percentage of the body surface burned were developed. Careful monitoring of burned patients during this shock phase by hourly urine output charts, central venous pressure measurements, hematocrit and blood gas determinations allowed more precise adjustments of these formulae, assuring better control of the patient during this critical period. The improved methods of handling the shock phase developed from 1950 through 1960 by Evans, Artz, Moyer, Shires and others are responsible for reducing the mortality rate in the acute severe burns from 75 per cent to less than 25 per cent.

With the reduction in mortality secondary to shock, the management of the severely burned patient became complicated by sepsis. Patients surviving shock would live three to four weeks only to die from overwhelming infection.

It is during this period in the burn patient's course that the greatest advances in care have occurred in recent years. Although the patient's own defenses are of prime importance in battling infection, it has been well known that severely burned patients develop a negative nitrogen balance within the first week post-burn and remain in that state until skin coverage is obtained. Two contributing factors have been better antibacterial therapy and an increase in the patient's own resistance to infection. The improvement of antibacterial therapy occurred from the use of topical antibiotics. The first of these agents introduced by Moyer in 1963, was

a 0.5 per cent aqueous solution. Although effective as an antibacterial, the silver solution was impractical to use because of electrolyte problems which resulted from its use and the fact that all the bed linen, uniforms, walls, and floors in the area of the treated patients turned black. Moncrief introduced the use of sulfamylon shortly thereafter. In the form of a cream, sulfamylon was easy to use and did not stain, but also produced electrolyte problems in its original chloride form. When combined with an acetate buffer, however, the electrolyte problems were eliminated. Although the use of sulfamylon reduced mortality statistics in the severe burn, eschar separation was delayed, as was re-epithelization, and hospitalization was significantly prolonged.

The combination of the effective parts of silver nitrate and sulfamylon into silver sulfadiazine, though still in clinical trial, shows promise. In addition to being an effective antibacterial agent, there is little discomfort with its use, unlike sulfamylon, and the incidence of sensitivity is quite low, about 1 per cent. Topical Gentamycin is a fourth promising topical antibacterial agent.

Bacterial collagenase is now being used by German surgeons to aid in the rapid removal of the burn eschar. It is conceivable that the combination of antibacterial and debriding agents will shorten this lag phase of the burn patients, allowing earlier skin coverage.

The use of allografts or heterografts, which was introduced by Moncrief and Switzer in 1965, has also played an important role in improving the burn patient's course during the septic phase.<sup>1</sup> Allografts convert the granulating wounds to sterile wounds, prevent evaporative water loss, and serve to test the readiness of a wound to accept an isograft. The percentage of "take" of isografts is improved using this technique and the surface areas of donor sites is reduced, which in themselves are new wounds liable to infection.

The expansion of skin grafts by surgical meshing has increased the efficiency of skin grafting the burn patient. A larger recipient site can be covered by a meshed graft than by the intact graft of the same area surface. The fenestrations allow drainage of

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serum or pus. Although these grafts are frequently life saving, they are cosmetically unacceptable and should not be used on the face.

It was also known that the increased metabolic rate of severely burned patients exceeds that of any abnormal diseased state, with oxygen consumption actually doubled in many patients. It was not until a fractional assessment of the evaporative water loss through burn eschars was made, however, that a prime source for the increased metabolic activity was discovered.<sup>2, 3</sup>

The leathery appearance of an eschar suggests that fluid loss through the eschar is minimal. In 1966 Cohen and others showed that evaporation of water from a burn eschar is increased ten-fold over that of normal skin, and loss through granulation tissue exceeds that of an eschar requiring that supplemental replacement must continue until skin coverage is complete.

This water loss is particularly important in the small children who are burned. For example, a two-year-old child with a 30 per cent burn may lose as much as one third of his normal daily fluid requirement. If his daily fluid requirement is 1,800 cubic centimeters he may lose 450 cubic centimeters by evaporation.

Evaporative water loss under average conditions from normal skin is about 0.4 cubic centimeter per minute for 25 square centimeters. Evaporation of a similar 25 square centimeters surface of water exposed to air under similar conditions, is about 8 cubic centimeters per minute. Therefore, one of the functions of the skin, primarily the lipoprotein of the stratum corneum, is a 20/1 reduction of evaporative water loss.

The significant effect of evaporative water loss is the dissipation of considerable energy from the body. As water evaporates, heat is removed at the rate of over one-half kilocaloric per milliliter of water evaporated. When a significant amount of water is lost, the patient becomes cold. To compensate, he shivers and peripheral vasoconstriction occurs in the unburned areas of skin in order to maintain normal body temperature. This caloric expenditure from such muscle contraction is partly the cause of the hypermetabolic state observed in burn patients. To meet these metabolic needs, fat stores are utilized and when depleted, the lean body mass is gradually broken down as an energy source. In addition, the effect of the endocrine response to trauma and stress on nitrogen balance creates an excretion of 25 to 30 grams of nitrogen a day in the urine in an average adult patient with a 30 per cent burn. To maintain a positive nitrogen balance an intake of 5,000 to 6,000 calories a day is necessary. Forced feeding through a nasogastric tube has been used to maintain

this high caloric intake, but is not well tolerated by the gastrointestinal tract for more than several days without diarrhea occurring.

The advent of parenteral hyperalimentation through a large silastic catheter introduced into the superior vena cava via the subclavian vein has been an important step forward in reducing negative nitrogen balance in the severely burned.<sup>4, 5</sup> The technique of Dudrick and Wilmore in 1967, though initially cumbersome, is now adaptable for use in the community hospital using readily available materials, equipment and personnel. The technique of safe subclavian catheterization is not difficult and long term care of the catheter is simple.<sup>5-7</sup>

The nutrient preparation consists of a high caloric solution that is prepared daily by removing 250 cubic centimeters from a 1,000 cubic centimeter container of 5 per cent dextrose and 5 per cent protein hydrolysate solution (C P H, Cutter). To the remaining 750 cubic centimeters, 350 cubic centimeters of 50 per cent dextrose are added. Vitamins or additional electrolytes, as indicated, are also incorporated with this solution at this time. The basic solution (1,100 cubic centimeters) provides 1,000 calories and contains 5.25 grams of nitrogen, 212 grams dextrose, 3 mEq sodium, 14 mEq potassium and 30 mEq chloride. Extra requirements are met with the addition of 40 mEq of potassium to each of two or three bottles of solution. Sodium is added daily in amounts of 77 to 154 mEq, while calcium and magnesium are supplied as directed by serum levels.

## Summary

As in many areas in medicine, giant strides have been taken in the last 20 to 25 years in the treatment of severely burned patients. An attempt was made to relate these to the total picture in the care of these patients. The areas of greatest advancement were first in the understanding of the pathophysiology of burn shock, and methods for determining the amount of fluid to be replaced and the type of fluid that should be replaced.

The second area of improvement has been in the use of topical antibiotics, which reduced the bacterial count in the eschar, where systemic antibiotics have no effect.

Third, the use of allografts and heterografts at the earliest possible time have helped produce early closure of the burn wound, though temporary, and reduce evaporative water loss and convert these wounds to sterile wounds in preparation for isografts.

Fourth, was the understanding of far-reaching metabolic effects produced by evaporative water loss through burn eschars, resulting in enormous energy

*(Continued on page 137)*



# Lymphocytes and Breast Cancer

## *Relationship of Blood Lymphocyte Count to Survival in Breast Cancer*

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IN A SIGNIFICANT proportion of cases, cancer of the female breast is truly a chronic disease. Bloom<sup>2</sup> in his classic study of survival in untreated breast cancer found median survival to be 2.7 years following diagnosis, with 18 per cent of patients alive at five years. Snaedal<sup>9</sup> in his study of patients with breast cancer in Iceland found that nine of a group of 33 untreated patients survived from 10 to 15 years. Sutton<sup>10</sup> has reported a series of breast cancers with symptom-free intervals of 15, 20, 30, and even 40 years from time of mastectomy to chest wall recurrence of cancer. These facts have led some investigators<sup>5</sup> to assert that the apparent success of therapy in breast cancer is not so much due to the therapy as to "biologic predeterminism" (combined degree of malignancy of the tumor and resistance of the host).

Recent interest has grown in defining host factors in resistance to cancer. Immunologic mechanisms have been invoked as possible explanations for the disparity in survival of groups of patients with some cancers. Berg<sup>1</sup> found that a high degree of inflammation, that is lymphocytic infiltration and plasma cell reaction, was compatible with longer survival in breast cancer. This inflammation was present both in the primary tumor and in regional lymph nodes. Other investigators<sup>3, 6, 11</sup> have demonstrated nuclear grade and sinus histiocytosis of regional lymph nodes to be of important prognostic significance. Yet another facet of host immunity has been investigated by Murray<sup>7</sup> who injected "immune serum" into patients in the late stages of breast cancer with a favorable response reported in most patients. The concentration of lymphocytes in the perfusing blood has been demonstrated to be important to immune func-

tioning of lymphoid tissue; higher concentrations providing a better immune response.<sup>4</sup>

The present study is retrospective analysis of total blood leucocyte counts and absolute blood lymphocyte counts in two groups of breast carcinoma pa-

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**Host factors are thought by many to influence survival in breast cancer. These factors have been difficult to define and even more difficult to measure. In this study, two groups of female patients with incurable breast cancer were compared; "short-survivors" and "long-survivors." Peripheral blood lymphocyte counts were found to be significantly lower in short-survivors than long-survivors at diagnosis. Lymphocyte counts did not decrease significantly until the terminal period of the disease in each group. It is suggested that blood lymphocyte count may be a useful measure of host defense mechanisms in breast cancer.**

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tients not cured of their disease: "short-survivors" and "long-survivors."

### **Materials and Methods**

From the 1,608 cases of breast carcinoma accumulated by the Tumor Registry of the University of Kansas Medical Center between 1944 and 1968 were selected two groups of "not-cured" patients for study (short-survivors and long-survivors).

*Long-survivors* in this study are those women who have lived more than ten years after diagnosis of breast carcinoma and either died with their breast carcinoma or were alive in December 1968 with evidence of residual (usually metastatic) breast carcinoma. These criteria were met by 124 patients. Of these, 23 had been seen only in the radiotherapy department and there was insufficient information in their hospital records to use them in all aspects of

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this study; thus, reducing the number to 101. Eight additional patients could not be used for blood counts because their hospital records were not available for analysis. Therefore, 93 patients are included in this group of long-survivors and were used for study of lymphocyte and total leucocyte counts.

*Short-survivors* in this study are those women who died within two years of an initial diagnosis of breast carcinoma. Patients found to fit in this category numbered 253. Hospital records of 57 of these patients were selected at random from those of this group of short-survivors who had only stage I or II breast carcinoma at initial diagnosis. Study of leucocyte and lymphocyte counts was done on this group of 57 patients.

Hospital charts were examined for records of white blood cell counts and differential counts of white cells. Absolute lymphocyte counts were calculated by multiplying the total number of white blood cells per mm<sup>3</sup> by per cent lymphocytes in corresponding differential counts. These counts were analyzed for 93 of the long-survivors and 57 of the short-survivors as noted above. To relate the blood counts to time from diagnosis, four periods are designated: Period I, 0, 1, and 2 years; Period II, 3 through 7 years; Period III, 8 through 12 years; Period IV, 13 through 17 years.

Total white blood cell counts and absolute lymphocyte counts were recorded for all patients living during the four time periods. Where more than one blood count was available for a patient during a given time period an average count for the patient for

that period was recorded. Because of the known depressing effect on leucocyte and lymphocyte counts by radiation and cancer chemotherapeutic agents, all counts recorded within six months of such therapy were discarded.

Statistical analysis was done by Student's t-test.

Results

Comparison of all long-survivors (124 patients) with all short-survivors (253 patients) revealed the following: Average age for both groups was 57 years. Average number of pregnancies for long-survivors was 1.7 and for short-survivors, 2.64 ( $p < 0.01$ ). The only difference in histology of tumors between the two groups was a slight increase in percentage of comedo and ductal carcinomas in the short-survivors. There were no differences in racial distribution, family history of cancer, family history of breast cancer, or presenting symptoms between the two groups.

Results of total leucocyte counts and absolute lymphocyte counts are given in *Table 1* and *Table 2*. Though total leucocyte counts did decline somewhat in time in both groups, at no time was there a significant (i.e.  $p < 0.05$ ) decrease between any two consecutive time periods. Absolute lymphocyte counts for long-survivors decreased from 2182 per mm<sup>3</sup> for Period IV, a drop of 38 per cent. Absolute lymphocyte counts for short-survivors were significantly lower in the first year Period I than corresponding counts for long-survivors in Period I, 1806 per mm<sup>3</sup> versus 2182 per mm<sup>3</sup> ( $p < 0.05$ ). While average absolute lymphocyte counts in short-survivors decreased 22 per cent from first year to second year of disease, total leucocyte count for this group decreased only 8 per cent in that time.

Discussion

Host defense mechanisms in cancer are often men-

TABLE 1  
AVERAGE BLOOD LYMPHOCYTE AND  
TOTAL LEUCOCYTE COUNTS FOR  
"LONG-SURVIVORS" OF BREAST CANCER

Period (Years)	Lymphocytes Per mm <sup>3</sup>	Significant Difference?	"p"	Total Leucocytes Per mm <sup>3</sup>	Significant Difference?	"p"
I 0-2	2182			8910		
II 3-7	2032	no	0.5	7329	no	0.3
III 8-12	1689	no	0.1	7343	no	1.0
IV 13-17	1351	yes	0.02	6747	no	0.2

TABLE 2  
AVERAGE BLOOD LYMPHOCYTE AND  
TOTAL LEUCOCYTE COUNTS FOR  
"SHORT-SURVIVORS" OF BREAST CANCER

Period (Years)	Lymphocytes Per mm <sup>3</sup>	Significant Difference?	"p"	Total Leucocytes Per mm <sup>3</sup>	Significant Difference?	"p"
I 0-1	1806			7438		
1-2	1421	yes	0.05	6840	no	0.3



tioned, but rarely defined and virtually never measured. In an effort to define and perhaps measure some of these elusive factors a group of long-survivors and a group of short-survivors with incurable breast cancer were compared. The two groups were quite similar except for a difference in the average number of pregnancies, the short-survivors having a significantly greater average number of pregnancies than the long-survivors. The reason for this difference is not known and shall remain moot as far as this present study is concerned.

Knowing that lymphocytes are important in immune defenses of mankind, an attempt was made to define and measure host defenses in terms of peripheral blood absolute lymphocyte counts. Initially, it was thought that there might be significant differences in lymphocyte counts between the two groups of patients. Indeed, it was found that lymphocyte counts were lower at diagnosis in the short-survivors as compared to the long-survivors; the difference being significant ( $p < 0.05$ ). Additionally, highly significant decreases in absolute counts were noted with progression of disease, particularly as the terminal stage was reached. This was true for both short-survivors and long-survivors. Total leucocyte counts were also compared; significant differences were not found.

Several possibilities suggest themselves as explanations for the highly significant decreases in lymphocyte counts. Both radiation and chemotherapy are known to depress total leucocyte and absolute lymphocyte counts; lymphocytes are more sensitive than other leucocytes.<sup>8</sup> However, the blood counts in this study were only those recorded before such treatment or at least six months following chemotherapy or irradiation. It is hoped that this adjustment eliminates this consideration of treatment as a cause of or decline in lymphocyte counts. Another possibility is involvement of bone marrow and lymphoid tissue with tumor, crowding out normal hematopoiesis and perhaps affecting lymphopoiesis. This, when it occurs, is very difficult to measure.

The third and most intriguing possibility is that the decrease in peripheral blood lymphocyte count represents a losing fight of the host against the cancer. It has been shown that the concentration of lymphocytes in the perfused splenic tissue is an important requirement for the immune functioning of the lymphoid tissue.<sup>4</sup> The demonstrated fact that this decrease in circulating lymphocytes is much more rapid in short-survivors than long-survivors suggests that long survival in breast cancer may be at least partly due to the presence of adequate numbers of lymphocytes and the active immune responses of the host they may represent.

Blood lymphocyte count might also now be added

to the list of factors that may be used to determine prognosis in breast cancer. Perhaps by following blood lymphocyte counts a physician may begin to define and measure host defense mechanisms in patients with breast cancer and possibly other cancers as well.

## References

1. Berg, J. W.: Inflammation and prognosis in breast cancer. *Cancer* 12:714-720, 1959.
2. Bloom, H. J. G.: The natural history of untreated breast cancer. *Ann. N. Y. Acad. Sci.* 114:747-754, 1964.
3. Cutler, S. J.; Black, M. M., and Goldenberg, I. S.: Prognostic factors in cancer of the female breast. *Cancer* 16:1589-1597, 1963.
4. Holborow, E. J.: The immunological capability of small lymphocytes. *Lancet* I:1049-1052, May 13, 1967.
5. Macdonald, I.: The natural history of mammary carcinoma. *Am. J. Surg.* 111:435-442, 1966.
6. Myers, M. H.; Axtell, L. M., and Zelen, M.: The use of prognostic factors in predicting survival for breast cancer patients. *J. Chronic Dis.* 19:923-933, 1966.
7. Murray, G.: Experiments in host resistance to cancer. *Amer. J. Surg.* 109:763-764, 1965.
8. Rebuck, J. W., editor: The lymphocyte and lymphocytic tissue. International Academy of Pathology Monograph. Paul B. Hoeber, Inc., Medical Division of Harper Bros., 1960, pp. 125-143.
9. Snaedal, G.: Cancer of the breast: A clinical study of treated and untreated patients in Iceland 1911-1955. *Acta Chir. Scand. Suppl.* 338, 1964.
10. Sutton, M.: Late recurrence of carcinoma of breast. *Brit. Med. J.* 2:1132-1134, Oct. 15, 1960.
11. Zelen, M.: A hypothesis for the natural time history of breast cancer. *Cancer Res.* 28:207-217, 1968.

## Burn Treatment Advances

(Continued from page 134)

demands that exceed the patient's energy reserves and throws him into negative nitrogen balance.

Fifth, was the development of the technique of parenteral hyperalimentation to supplement the caloric intake and maintain a positive nitrogen balance and thus improve the host's own defense mechanisms against bacterial invasion and enhance his wound healing capability.

## References

1. Miller, T., and Switzer, W.: Early homografting of second degree burns. *Plastic & Reconst. Surg.* J. 39:117, 1967.
2. Cohen, S.: An investigation and fractional assessment of the evaporative water loss through normal skin and burn eschars using a micro hydrometer. *Plastic & Reconst. Surg.* J. 37:475, 1966.
3. Roe, C. F.: Evaporative water and heat loss. *J. Trauma*, 6th National Burn Seminar, 1967.
4. Collins, R. N., et al.: Risk of local and systemic infection with polyethylene intravenous catheters. *New Eng. J. Med.* 279:340, 1968.
5. Dudrick S. J., et al.: Can intravenous feeding as the sole means of nutrition support growth in the child and restore weight loss in an adult. *Ann. Surg.* 169:974, 1969.
6. Dudrick, S. J.: Spontaneous closure of traumatic pancreaticoduodenal fistulas with total intravenous nutrition. *J. Trauma* 10:542, 1970.
7. Rice, C. O., et al.: Parenteral nutrition in the surgical patient as provided from glucose, amino acids and alcohol. *Ann. Surg.* 131:289, 1950.

# Disseminated Intravascular Coagulation

## *Postpartum Hemolytic-Uremic Syndrome With Recovery of Renal Function*

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### Introduction

THE PURPOSE of this report is to describe the clinical course of a patient who developed disseminated intravascular coagulation and acute renal failure 12 days following the birth of a normal infant. This is the only patient with the postpartum hemolytic-uremic syndrome reported to survive with relatively normal renal function.

### Case Report

A 27-year-old caucasian woman gravida 2, para 2, gave birth to a normal, viable female infant by elective cesarean section on August 20, 1969, at another hospital following an apparently normal pregnancy. Cesarean section was performed because of pelvic deformity. There were no immediate postoperative complications. She received ergotamine 0.2 milligram twice a day for 11 days. On the 12th day postpartum, she complained of extreme fatigue, pallor and bloody vaginal discharge. The hematocrit was 16 volumes per cent and the direct bilirubin was 1.1 milligrams per 100 milliliters. She was transfused with six units of whole blood. On the 17th day postpartum, she had melena, flank pain and shortness of breath. The blood urea nitrogen concentration was 54 milligrams per 100 milliliters. She was transferred to the University of Kansas Medical Center on the 24th day postpartum.

The blood pressure was 175/90 millimeters mercury and the pulse 76 beats per minute. The rectal temperature never exceeded 38 degrees centigrade. The optic fundi were normal. There was mild edema of the lower extremities and ecchymoses about the upper extremities. The uterus was slightly enlarged and blood was oozing from the cervical os.

The hematocrit was 25 volumes per cent and the platelets were estimated to be decreased in number. The blood urea nitrogen concentration was 108 milligrams per 100 milliliters and the serum creatinine 7.9 milligrams per 100 milliliters. The creatinine

clearance was 17 milliliters per minute. The urine sediment examination revealed 1 to 3 pus cells, 3 to 6 red blood cells and several hyaline and granular casts per high power field. Urinary protein excretion was 1.9 grams per 24 hours. Serum uric acid was 16.8 milligrams per 100 milliliters. Serum haptoglobin was under 10 milligrams per 100 milliliters. Electrocardiogram and chest x-ray were interpreted as normal. Blood and urine cultures were sterile. Cultures of the vaginal discharge revealed a mixed

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**Disseminated intravascular coagulation and acute renal failure developed in a 27-year-old woman following an uncomplicated pregnancy and delivery. Systemic heparinization and removal of necrotic placental tissue by uterine curettage are factors believed to be responsible for the recovery of renal function.**

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flora. On the 26th day postpartum, she had a grand mal seizure and complained of severe dyspnea. A gallop rhythm and bilateral basal rales were heard for the first time. The peripheral blood contained helmet cells, blister cells and other forms of fragmented red cells. The platelet count was 150,000 per cubic milliliter. The fibrinogen was 200 milligrams per 100 milliliters. The prothrombin time was 13.2 seconds with a control of 12.0 seconds. The clotting time was six minutes. Euglobulin lysis time was greater than five hours. A test for increased fibrinogen-degradation products in the blood (Fi test) was positive. Serum bilirubin was 0.5 milligram total with 0.1 milligram in the direct fraction. The serum alkaline phosphatase and SGOT were normal. The blood lactic dehydrogenase was 1,674 units per milliliter with elevation of LDH<sub>1</sub> isoenzyme fraction.

She was transferred to the Nephrology Service and treated with intravenous heparin sufficient to maintain the clotting time greater than 2½ times control. She was also digitalized with digoxin. On the 27th day postpartum, the creatinine clearance

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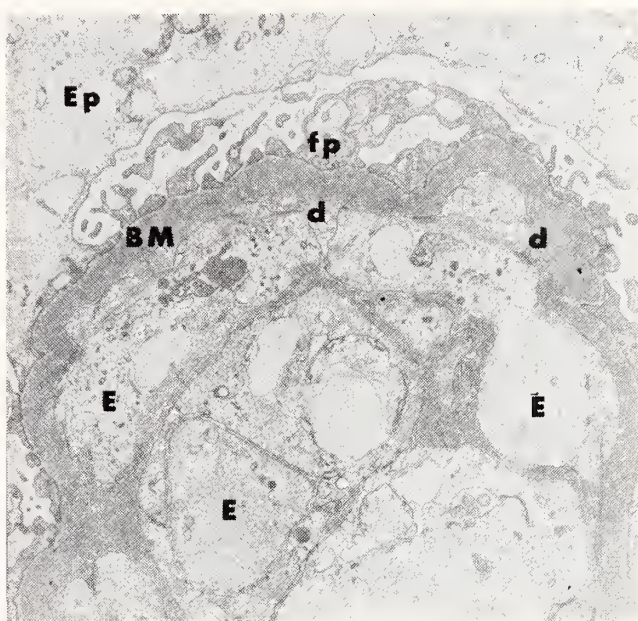


was 14 milliliters per minute. Renal function gradually improved in response to heparin, blood transfusions, and digoxin and on the 30th day postpartum, the creatinine clearance was 31 milliliters per minute; however, she continued to bleed profusely from the lungs, skin, gastrointestinal tract and the vagina. The platelet count was 47,000 per cubic millimeter and fragmented red cells were increased in the peripheral blood. On the 30th day postpartum small pieces of tissue were seen in the vaginal discharge. Curettage of the uterine cavity yielded several grams of necrotic placental tissue. Vaginal bleeding decreased immediately after the operative procedure. Systemic heparinization was continued. The day following the dilation and curettage there was less gastrointestinal bleeding and no hemoptysis. The platelet count had risen to 64,000 per cubic millimeter. There was rapid clinical improvement over the next three days. On the 34th day postpartum, the platelet count was 150,000 per cubic milliliter, and the smear of peripheral blood contained only a few fragmented red cells. The heparin was discontinued.

A percutaneous renal biopsy was performed on the 47th day postpartum when the creatinine clearance was 55 milliliters per minute. Light microscopy (*Figure 1*) revealed swollen and vacuolated glomerular endothelial cells. The most striking changes were endothelial edema and disruption of the in-

ternal elastic lamina in the small arteries. Intravascular thrombi were not observed. Electron microscopy (*Figure 2*) showed disruption of the normal structure of many of the organelles of the endothelial cells, especially the mitochondria, and sub-endothelial accumulations of electron-dense granular material.

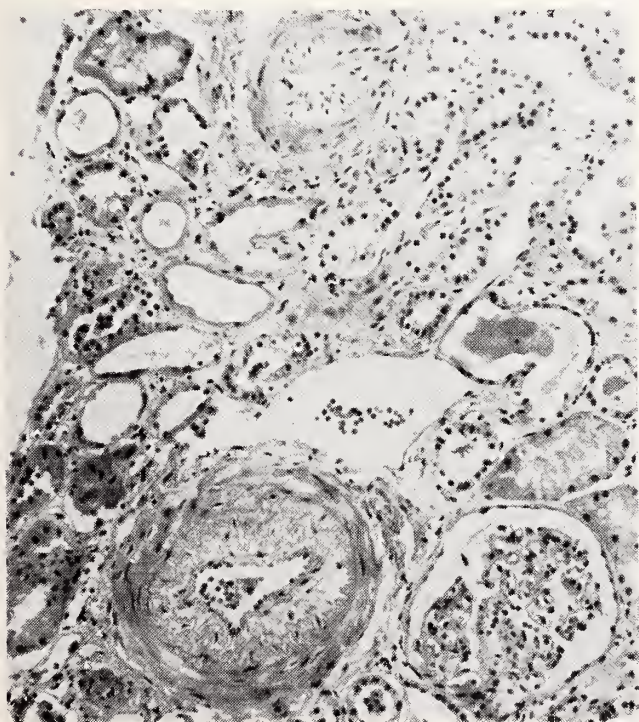
The patient was discharged from the hospital on the 52nd day postpartum. The blood pressure was 150/100. Seven months later her creatinine clearance was 113 milliliters per minute and a random determination of urine specific gravity was 1.020. Moderate doses of antihypertensive medication are required to keep the blood pressure at or below 150/100 millimeters mercury.



*Figure 2.* Electron photomicrograph of a glomerular lobule. The basement membrane (BM) is irregular and swollen endothelial cells (E) obliterate the capillary lumen. There are deposits of dense material (d) between endothelial cells and the basement membrane, and among endothelial cells. (Ep) swollen visceral epithelial cells; (fp) foot processes of visceral epithelial cells. Epon-araldite embedded, stained with lead citrate and uranyl acetate, X 11,000.

## Discussion

The patient described in this report suffered from a rare condition variously designated by others as postpartum malignant nephrosclerosis,<sup>1</sup> irreversible postpartum renal failure,<sup>2</sup> accelerated postpartum nephrosclerosis,<sup>3</sup> late postpartum intravascular coagulation,<sup>4</sup> and postpartum renal failure.<sup>5</sup> In the previously reported cases, acute renal failure developed insidiously three days to twelve weeks after an otherwise uncomplicated antepartum and postpartum course. It is now recognized that a common feature of these reported cases probably is a disseminated intravascular coagulation with fibrin deposition in the



*Figure 1.* Light photomicrograph of renal biopsy. The walls of the small arterioles are thickened by edema and duplication of the elastic lamellae. The glomerular capillary walls are slightly thickened. Proximal and distal tubules are focally dilated and contain proteinaceous material within the lumens. Hematoxylin and eosin stain. X 190.



small vessels of the kidney, causing the severe acute renal damage. With massive intravascular coagulation, there is a reduction in the blood content of many clotting factors, notably thrombin, fibrinogen and platelets. As in all conditions leading to disseminated intravascular coagulation, the deposition of fibrin in the small blood vessels throughout the body causes the mechanical destruction of red blood cells and anemia.<sup>6-8</sup> Burr cells, shistocytes, helmet cells and blister cells are seen in the peripheral blood. In view of these considerations, it has been suggested that the best name for the condition described in these patients is *postpartum hemolytic-uremic syndrome*.<sup>7</sup>

As shown in *Table 1*, of the 14 reported cases only four have survived and two of these have severe renal insufficiency. Several of the patients underwent prolonged peritoneal dialysis and hemodialysis without recovery of renal function. The only patient to survive with relatively normal renal function is reported in the present study. The vascular injury demonstrated on renal biopsy probably has not reversed completely in view of her continued moderate hypertension.

There does not seem to be a single etiologic factor in the genesis of the abnormal coagulation process in the postpartum period. The pathological changes resemble those encountered in the generalized Schwartzman reaction. Clarkson *et al.*<sup>5</sup> suggest that women in the postpartum period are unusually susceptible to a variety of otherwise inoffensive stimuli, which in this setting may provoke a generalized Schwartzman reaction. As shown in *Table 1*, in seven of the patients, there was a history suggestive of a viral illness preceding the onset of the hemolytic anemia. It is reasonable to suppose that those patients may have had an exaggerated hemostatic reaction in response to a common virus.

Ten patients, including ours, received oxytocic

drugs in the immediate postpartum period, which may have caused generalized arteriolar spasm and local intravascular clotting as a result of vessel injury. In many cases, however, the temporal relation between exposure of the patient to the drug and the onset of the abnormal clotting process is not impressive.

In three of the reported cases, necrotic placenta was found within the uterine cavity. There was a dramatic improvement in the clinical appearance of our patient and an increase in the platelet count within 24 hours after extracting the remaining decidua. Rosenmann *et al.*<sup>4</sup> suggest that thromboplastic substances derived from necrotic placenta may be an important factor in the pathogenesis of the disseminated intravascular coagulation in this syndrome. The placenta is also implicated as an etiologic factor in prepartum and postpartum eclampsia.<sup>10, 11</sup> In at least one instance postpartum eclampsia and acute renal failure, a condition with renal pathological features similar to the postpartum hemolytic uremic-syndrome, were dramatically corrected by removing several grams of decidua by curettage.<sup>12</sup> There is evidence to suggest that microangiopathic hemolytic anemia (disseminated intravascular coagulation) figures prominently in the pathogenesis of severe toxemia of pregnancy.<sup>13, 14</sup> Postpartum hemolytic uremic syndrome and postpartum eclampsia may be products of a similar pathogenetic mechanism in which intra-uterine factors promote the development of disseminated intravascular coagulation. It is not possible to implicate retained placental fragments as a cause of the disseminated intravascular coagulation in all of the reported cases of postpartum hemolytic-uremic syndrome. In many of the autopsy reports, abnormal uterine findings were not mentioned. Further, in one patient who had no unusual pelvic findings on clinical examination, a curettage, performed early in the illness in the hope of removing an occult cause of

TABLE 1  
CASE STUDIES OF POSTPARTUM HEMOLYTIC-UREMIC SYNDROME

<i>Authors</i>	<i>Patients Studied</i>	<i>Patients Survived</i>	<i>Creatinine Clearance Survivors</i>	<i>Onset of Symptoms</i>	<i>Possible Prodromal Viral Illness</i>	<i>Received Oxytocic Drugs</i>	<i>Retained Placenta</i>
Scheer & Jones <sup>1</sup> . . . . .	1	0		12 weeks	1		
Robson <i>et al.</i> <sup>2</sup> . . . . .	4	2	2 & 7 ml./min.	5,2,3,3 wks.	3	4	
Wagoner <i>et al.</i> <sup>3</sup> . . . . .	3	0		8,23,15 days	1	3	
Rosenman <sup>4</sup> . . . . .	1	0		3 days			1
Clarkson <i>et al.</i> <sup>5</sup> . . . . .	3	0		5,?,2 weeks	2	1	1
Luke <i>et al.</i> <sup>9</sup> . . . . .	1	1	45 ml./min.	2 weeks		1	
Present case . . . . .	1	1	113 ml./min.	12 days		1	1
	—	—			—	—	—
	14	4			7	10	3



systemic coagulation, was without beneficial effect.<sup>5</sup> Although evidence of a primary intrauterine cause for the disseminated intravascular coagulation process in three of these patient is only circumstantial, in view of the dramatic clinical improvement in the present case and the disastrous outcome in most other reported cases, we suggest that serious consideration be given to performing uterine curettage early in the course of the disease when clinical signs suggest intrauterine pathology.

Our patient was treated with heparin, an anticoagulant which has recently been reported to be beneficial in the postpartum hemolytic-uremic syndrome,<sup>9</sup> as well as in other clinical conditions in which disseminated intravascular coagulation is a prominent feature.<sup>6-8</sup> In the present study, there is evidence to suggest that heparinization prevented progressive deterioration of renal function, however, it is emphasized that the hemolytic anemia, thrombocytopenia and bleeding diathesis did not abate until after the uterine curettage was performed.

#### ACKNOWLEDGEMENTS

We thank Dr. Cesar Villanueva for performing the dilation and curettage.

#### References

1. Scheer, R. L., and Jones, D. B.: Malignant nephrosclerosis in women post partum. *JAMA* 201:106, 1967.
2. Robson, J. S.; Martin, A. M.; Ruckley, V. A., and MacDonald, M. K.: Irreversible post-partum renal failure. *Quart J. Med.* 147:423, 1968.
3. Wagoner, R. D.; Holley, D. E., and Johnson, W. J.: Accelerated nephrosclerosis and postpartum acute renal failure in normotensive patients. *Ann. Int. Med.* 69:237, 1968.
4. Rosenmann, E.; Kanter, A.; Bacani, R. A.; Pirani, C. L., and Pollak, V. E.: Fatal late postpartum intravascular coagulation with acute renal failure. *Amer. J. Med. Sci.* 257:259, 1969.
5. Clarkson, A. R.; Meadows, R., and Lawrence, J. R.: Post-partum failure renal failure. ?The generalized Schwartzman reaction. *Austral. Ann. Med.* 18:209, 1969.
6. McKay, D. G.: Progress in disseminated intravascular coagulation (Part I). *Calif. Med.* 111:186, 1969.
7. McKay, D. G.: Progress in disseminated intravascular coagulation (Part II). *Calif. Med.* 111:279, 1969.
8. Deykin, D.: The clinical challenge of disseminated intravascular coagulation. *New Eng. J. Med.* 283:636, 1970.
9. Luke, R. G.; Siegel, R. R.; Talbert, W., and Holland, N.: Heparin treatment for post-partum renal failure with microangiopathic haemolytic anaemia. *Lancet* 2:750, 1970.
10. Hunter, C. A., Jr., and Howard, W. F.: A pressor substance (hysterotonin) occurring in toxemia. *Amer. J. Ob. & Gyn.* 79:838, 1960.
11. Hunter, C. A., Jr.; Howard, W. F., and McCormick, C. O., Jr.: Amelioration of the hypertension of toxemia by postpartum curettage. *Amer. J. Ob. & Gyn.* 81:884, 1961.
12. Harer, W. B., Jr., and McIndoe, D. W.: Postpartum eclampsia treated by curettage. *Amer. J. Ob. & Gyn.* 84:1349, 1962.
13. Pritchard, J. A.; Weisman, R.; Ratnoff, O. D., and Vosburgh, G. J.: Intravascular hemolysis, thrombocytopenia and other hematologic abnormalities associated with severe toxemia of pregnancy. *New Eng. J. Med.* 250:89, 1954.
14. Bonnar, J.; Pidgla, C. F.; McNicols, G. P., and Douglas, A. S.: Fibrin degradation products in normal and abnormal pregnancy and parturition. *Brit. Med. J.* 3:137, 1969.

#### 23rd Annual

## MIDWEST CANCER CONFERENCE

### FOR PHYSICIANS

#### "THE PHYSICIAN VERSUS CANCER"

Bernard C. Korbitz, M.D.—Associate Clinical Professor of Medicine and Hematology, University of Wisconsin Medical Center, Madison, Wisconsin. *The Laboratory—New Diagnostic Methods or Latest Tools for Treatment*, Friday, 9:15 a.m. and *The Future of Management of Leukemia*, Friday, 3:45 p.m.

Robert W. McConnell, M.D.—Chairman, Board of Chancellors, The American College of Radiology, Dallas, Texas. *Nuclear Medicine Procedure Aids in Staging of Cancer Patients*, Friday, 9:45 a.m. and *Carcinoma of the Thyroid—A Program of Treatment*, Friday, 2:00 p.m.

James W. Daly, M.D.—Director, Tumor Division, Department of Obstetrics-Gynecology, College of Medicine, University of Florida, Gainesville, Florida. *Carcinoma in Situ Cervix: The Problems of Diagnosis & Treatment*, Friday, 10:30 a.m. and *Lesions of the Vulva*, Friday, 2:30 p.m.

John Spratt, M.D.—Director and Administrator, Ellis Fischel State Cancer Hospital, Columbia, Missouri. *Carcinoma of the Breast—Its Management*, Friday, 11:00 a.m. and *The Small Cancer of the Bowel*, Friday, 3:15 p.m.

Ben Trump, M.D.—Department of Pathology, School of Medicine, Duke University, Durham, North Carolina. *Virology and Its Relationship to Cancer*, Saturday, 9:00 a.m.

Charles F. McKhann, M.D.—Professor of Surgery, University of Minnesota, Minneapolis. *Immunological Aspects of Cancer*, Saturday, 10:15 a.m.

R. Neil Schimke, M.D.—Assistant Professor of Medicine & Pediatrics, University of Kansas Medical Center, Kansas City, Kansas. *Genetics—Its Role in Cancer*, Saturday, 11:15 a.m.

Barth Hoogstraten, M.D.—Professor of Medicine, Director, Clinical Oncology, University of Kansas Medical Center, Kansas City, Kansas. *The Challenge of Cancer Education: The Medical Student and Practicing Physician*, Friday Luncheon Speaker, 12:00 noon.

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# Murmurs—Innocent or Otherwise?

## *The Innocent Cardiac Murmurs of Childhood*

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JAMI SHAKIBI, M.D. and ANTONI M. DIEHL, M.D., *Kansas City, Kansas*

WHEN ANY CARDIAC murmur is heard it is crucial to determine whether underlying heart disease is present even though no overt manifestations of congestive failure exist and the patient is not cyanotic. The adjectives of innocent, nonorganic and functional when prefacing a murmur simply indicate that the murmur is not produced by an acquired or congenital structural lesion and an innocuous situation exists. The chest roentgenogram is normal as to heart size, configuration and pulmonary blood flow.<sup>1</sup> The electrocardiogram is normal, showing no evidence of ventricular hypertrophy, atrial overload or aberrations in rhythm.<sup>1</sup>

The majority of heart disease in the pediatric age group is due to either a congenital deformity of the cardiovascular system or an acquired valvular regurgitant lesion as a sequela of acute rheumatic fever. Important questions arise whenever organic heart disease is present. Some of these include: what is the allowable physical activity?; is there a necessity to prevent streptococcal infections in the rheumatic individual?; are there indications for appropriate therapeutic antimicrobial agents to reduce the likelihood of superimposed bacterial endocarditis?; and, is the lesion operable and does indication for surgery exist either now or in the future? For proper patient care and management, answers to these questions must be available.

The purpose of this communication is to review the important features of innocent murmurs and to offer helpful suggestions for the differential identification of such murmurs from organic heart disease. Emphasis will be placed on physical findings, particularly auscultation. The five most common, innocent, functional murmurs will be described in detail.

### Introduction

In order to reacquaint ourselves with the proper understanding of the various types of murmurs, ex-

planations of terminology are necessary. Synonymous with "systolic ejection murmur"<sup>2</sup> are the terms "stenotic murmur"<sup>3</sup> or "diamond-shaped murmur."<sup>3</sup> This murmur begins after isometric contraction at the onset of the ejection phase of the blood, has mid-systolic accentuation, is rough and rather low-pitched. The "holosystolic murmur" is synonymous with "pansystolic murmur"<sup>2</sup> or "regurgitant systolic murmur."<sup>2</sup> The onset of this murmur is at the beginning of systole with the initiation of isometric contraction

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**The physical examination findings with particular reference to the auscultatory characteristics of the more common nonorganic, innocent, functional murmurs encountered in children are presented. Suggested causes and the management of such murmurs are discussed. In the majority of instances, with careful attention to auscultation, the organic murmur can be differentiated from these totally unimportant innocent, functional, nonorganic murmurs of childhood. It behooves the physician to be able to identify such murmurs since better patient care can be rendered and anxieties of parents relieved. However, if the diagnosis of an innocent murmur cannot be determined with confidence, consultation should be sought with a physician more familiar with recognition of both the organic and innocent murmurs encountered in the pediatric age group.**

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and carries throughout the systolic phase of the cardiac cycle, is higher-pitched and has a somewhat blowing quality.<sup>2, 3</sup>

In general, most functional murmurs are short in duration and systolic in timing.<sup>1</sup> The intensity is variable, but usually Grade III/VI or less.<sup>1</sup> Situations of increased cardiac output, such as fever, excitement or exercise enhance the loudness of most

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innocent murmurs.<sup>4</sup> The incidence of functional murmurs varies considerably according to age group. As neonates, up to one third of babies have functional murmurs.<sup>5-7</sup> They are uncommon beyond the age of 21 years.<sup>8</sup> Approximately 80 per cent of all normal children will have a functional innocent murmur detected during their pediatric years if careful auscultation is observed.<sup>1, 4, 8-11</sup>

## Types and Characteristics

1. *Pulmonary Systolic Ejection Murmur*—This murmur is due to turbulence of blood flow at the bifurcation of the pulmonary artery as the blood is ejected from the right ventricle during systole.<sup>4, 12, 13</sup> This physiologic murmur is heard best at times of increased cardiac output such as with fever and anxiety. It is most commonly heard in children between the ages of two and ten years and is located at the pulmonic area. Characteristically this murmur is short and early in systole,<sup>14</sup> with an intensity of Grade I-III and has an ejection quality.<sup>10, 15</sup> The precordium is quiet and the second heart sound is physiologically split with a normal pulmonary component.

In the differential diagnosis, mild pulmonary stenosis, a small atrial septal defect, and minimal aortic stenosis must be considered. In mild pulmonary stenosis with a small gradient between the right ventricle and the pulmonary artery, the split of the second heart sound is increased and the pulmonary component is diminished;<sup>2</sup> a Grade III to IV/VI and occasionally louder, rough, prolonged ejection systolic murmur is located at the pulmonary area; a systolic ejection click may also be present in the same location. In an atrial septal defect with a small left-to-right shunt, a right ventricular heave usually is present on palpation and the split of the second heart sound at the pulmonic area is increased with a tendency to "fixation" (little fluctuation with respiration). In mild aortic stenosis the ejection murmur is characteristically located at the aortic area in the right second interspace, is harsh, medium pitched, prolonged and often is accompanied by transmission into the carotid vessels. There is commonly a suprasternal notch systolic thrill and the pulmonary component of the second sound is normal.

2. *The Venous Hum*—This murmur is caused by turbulence of blood flow at the junction of the internal, the external and the subclavian veins.<sup>10</sup> Silent laminar flow in the internal jugular vein is disturbed by deformation of this vessel at the level of the transverse process of the atlas during head rotation.<sup>16</sup> The murmur is located in the superficial neck veins bilaterally, more commonly on the right than the left.<sup>17, 18</sup> Characteristically the murmur is heard in the upright position only,<sup>4</sup> is continuous in timing with diastolic accentuation, and varies in intensity from

Grade I to III/IV.<sup>1, 19</sup> Turning the head away from the side of auscultation accentuates the murmur and it is diminished or obliterated by placing the patient in a recumbent position or by turning the head toward the stethoscopic auscultation side or with light pressure on the venous return above the stethoscope.<sup>4</sup> The cervical venous hum is most frequently confused with the murmur of patent ductus arteriosus; the latter continuous murmur, however, is usually located at the second left interspace or under the left clavicle and tends to obscure the second heart sound and has late systolic accentuation.

3. *The Vibratory Murmur (Still's murmur)*—This murmur is possibly caused by vibration of the papillary muscles and chordae tendineae within the left ventricular chamber of the heart during normal systole.<sup>11, 20</sup> It is low-pitched and has a twanging-string, groaning, buzzing, musical or vibratory quality and is usually heard best in the recumbent position midway between the apex and the deep left sternal border. Although this Grade I-III/VI murmur carries through most of systole there is late systolic attenuation.<sup>1, 4, 14, 15</sup> The unique musical quality is due to its pure harmonic tone. This, the commonest innocent murmur in childhood,<sup>1, 4, 10</sup> is most frequently heard in children three to seven years of age, but may be heard in infants as well as adults.

The vibratory murmur must be differentiated from the murmurs caused by a ventricular septal defect and mitral regurgitation. In the ventricular septal defect there is a harsh holosystolic murmur usually Grade III to IV but occasionally Grade V or VI located at the deep left sternal border in the third to the fifth interspace.<sup>2</sup> In the ventricular septal defect of the muscular type, the murmur characteristically fades off during late systole (late attenuation). The murmur of mitral insufficiency is pansystolic and is usually located at or near the apex and frequently has transmission to the axilla and is of higher pitch with a blowing quality.<sup>2</sup>

4. *The Cardiorespiratory Murmur*—This unique murmur is probably caused by a small portion of lung tissue being trapped between the anterior surface of the heart and the posterior surface of the sternum.<sup>4, 20</sup> It is heard best at the lower left sternal border or just lateral to it, localized, Grade II-IV in intensity, rather high-pitched and harsh, and occurs in mid or late systole, varying with respiration. This prolonged, leathery, extracardiac murmur is either obliterated or markedly reduced in intensity when firm chest or stethoscopic pressure is used with the child in a relaxed recumbent position.<sup>20</sup>

Because of the rather typical quality of this murmur it is unlikely to be confused with the organic murmurs. However, the murmurs caused by mitral insufficiency and ventricular septal defects are holo-

systolic whereas the cardiorespiratory murmur does not truly have a regurgitant quality. The murmur of mitral regurgitation is located at the apex and frequently has left axillary transmission. Also, the ventricular septal defect murmur is not affected by chest or stethoscopic pressure.

5. *The Carotid Bruit*—This murmur is caused by excessive angulation of the carotid arteries in the neck, usually being better heard on the right side. Although usually systolic in timing with an ejection quality, it may be continuous with systolic accentuation. The carotid bruit is not well heard at the aortic area, an important differentiating point from aortic stenosis.

### Helpful Hints

Through considerable experience at auscultation the authors would like to offer several suggestions to aid the physician in identifying the innocent murmur. The change of the intensity of a murmur with position usually is not helpful in differentiating the organic from the nonorganic murmur except for the venous hum which markedly lessens or disappears upon recumbency. Most nonorganic as well as organic murmurs will lessen in intensity during inspiration because of the increased distance between the stethoscope and the origin of the murmur. Whenever possible, all children should be auscultated in the recumbent position in relaxed expiration since the cardiac output is less and the chest flatter. Although most Grade I murmurs are innocent, organic heart disease may be present if the murmur is holosystolic and at the apex indicating mitral regurgitation. The ability to hear a murmur in the back is usually dependent upon its intensity. Since Grade I and II murmurs are rarely heard posteriorly, most innocent murmurs are not appreciated by auscultation over the posterior chest. When a murmur is heard in the back it may well be organic. Increased cardiac output increases the intensity of most innocent murmurs as well as those with organic significance. In the majority of instances purely by relying on the finer points of auscultation, differentiation of the innocent from the organic murmur is possible.

### Management

Once the cardiac murmur has been diagnosed as innocent the following points should be discussed with the parents: the heart and blood vessels are normal and no cardiovascular abnormality is present;

there is no need for further cardiac supervision or evaluation; antistreptococcal prophylaxis is not warranted; antibiotic prophylaxis against bacterial endocarditis is not indicated; the murmur will not predispose the heart to disease in the future; full activity including competitive athletics and physical endurance feats may be permitted; and, that in all probability, the murmur will disappear in adolescence, but even should it persist into adult life no ominous situation exists.

### References

1. Caceres, C. A., and Perry, L. W.: *The Innocent Murmur*, Boston, Little, Brown and Co., 1967.
2. Leatham, A.: Auscultation of the heart. *Lancet* 2:703, 1958.
3. Nadas, A. S.: *Pediatric Cardiology*, 2nd Edition. London, W. B. Saunders Co., 1964.
4. Castle, R. F.: Clinical recognition of innocent cardiac murmurs in children. *JAMA* 177:71, 1961.
5. Craige, E., and Harned, H. S., Jr.: Phonocardiographic and electrocardiographic studies in normal newborn animals. *Am. Heart J.* 65:180, 1963.
6. Hallidie-Smith, K. A.: Some auscultatory and phonocardiographic findings observed in early infancy. *Brit. Med. J.* 5175:756, 1960.
7. Gyllensward, A.: Incidence of heart murmur in newborn infants. *Acta Paediat.* 45:63, 1956.
8. Rogers, S. J., and Reese, G.: Health studies—presumably normal high school students. *Dis. Child.* 108:572, 1964.
9. Epstein, N.: The heart in normal infants and children. Incidence of precordial systolic murmur, fluoroscopic and electrocardiographic studies. *J. Pediatrics* 32:39, 1948.
10. Fogel, D. H.: The innocent systolic murmur in children. A clinical study of its incidence and characteristics. *Am. Heart J.* 59:844, 1960.
11. Stuckey, D.: Doud, B., and Walsh, H.: Cardiac murmur in school children. *Med. J. Aust.* 4:36, 1957.
12. Lewis, D. H.; Ertugrul, A.; Dietz, G. W.; Wallace, J. D.; Brown, J. R., Jr., and Moghadam, M.: Intracardiac phonocardiography in the diagnosis of congenital heart disease. *Pediatrics* 23:837, 1959.
13. Segal, B. O.; Novack, P., and Kasparian, H.: Intracardiac phonocardiography. *Am. J. Card.* 13:188, 1964.
14. Harris, T. N., and Needleman, H. L.: Studies by cathode ray oscillography of innocent and pathologic cardiac murmurs in children. *Am. Heart J.* 52:887, 1956.
15. Moss, A. J.: The "incidental" systolic murmur. *Pediatrics* 45:687, 1970.
16. Cutforth, R.; Wiseman, J., and Sutherland, R. D.: The genesis of the cervical venous hum. *Am. Heart J.* 80:488, 1970.
17. Landis, H. R. M., and Kauffman, I.: The occurrence of venous hum in children. *Arch. Ped.* 29:88, 1912.
18. Jones, F. L., Jr.: Frequency, characteristics and importance of the cervical venous hums in adults. *New Eng. J. Med.* 267:658, 1962.
19. Graf, W.; Moller, T., and Mannheimer, E.: Continuous murmur: Incidence and characteristics in different parts of the body. *Acta Med. Scand.* 196 (Suppl.):167, 1947.
20. Vongprateep, C.; Diehl, A. M., and Lauer, R. M.: Unpublished observations.



# Borderlands of Epilepsy

## *Current Status of Some Problems in the Borderlands of Epilepsy*

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MORE THAN HALF a century ago, a fine book was written on the subject "Borderlands of Epilepsy" by one of the greatest of neurologists, Sir William Gowers.<sup>15</sup> With the accumulation of vast amounts of scientific data since the writing of that book, the subject is possibly of even greater interest. Prior to 1930, the diagnosis of epilepsy was purely a clinical one, devoid of any objective test. With the discovery of the electroencephalogram, a laboratory test of brain function became available, and the demonstration of the usefulness of the EEG in the confirmation of the diagnosis of epilepsy is a matter familiar to all. One way of phrasing the subject under discussion in the form of a hypothesis would be—what is the meaning of the abnormal EEG in various conditions that do not fit any category of well-known seizure phenomenon? How often can we say, in various clinically nonepileptic states, that the abnormal EEG signifies the kind of brain pathophysiology which is usually manifested by tonic-clonic or petit mal seizures? It can be said at the outset that any complete answer to this question is not known. Three conditions will be concentrated upon here—adult patients apparently suffering from psychiatric disorders, children with behavior disorders, enuresis and night terrors, and children with migraine. To what extent should we weigh the various types of EEG abnormalities seen in these conditions, and what may be the connection between behavioral manifestations and the disturbed brain physiology that is manifested by these EEG patterns?

As an introduction, we might first look at those conditions in which manifest symptoms *accompany* severe, overt EEG abnormality although the *symptoms* are not those of epilepsy, as we think of it. Probably the most clear-cut, although one of the rarest, of these problems is that condition known as "petit mal status" in which the individual is conscious, although poorly responsive, dull and obviously altered in behavior.<sup>3</sup> In these individuals, previously known to suffer from petit mal epilepsy

and to have had the typical spike wave pattern on the EEG, during prolonged periods of dullness the EEG shows continual spike wave abnormality. This situation would seem to be the prime example of an almost unmistakable connection between an epi-

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**Accumulation of knowledge has been slow in these "borderlands of epilepsy" areas, one major reason being that they can be identified and studied in man alone. We do not recognize schizophrenia or migraine in experimental animals and the study of behavioral abnormalities in them is a quite recent science. The EEG has been an investigative tool of revolutionary importance but it is a crude one and the EEG recorded from scalp electrodes can be relied on to reveal only a comparatively small portion of the electrical activity, normal and abnormal, occurring deep in the brain, nor do we know anything about possible neuronal abnormality as revealed by microelectrode studies, in these difficult clinical problems. We do know that the electroencephalogram has shown the possibility of neurophysiological abnormalities in as yet unknown numbers of conditions previously thought "functional," and we may hope for, and expect more, elucidation of the nature of these abnormalities and their specific clinical correlates, with the use of new instrumentation.**

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leptiform type of EEG pattern and a behavioral disturbance quite remote from epileptic symptomatology. A step removed from this situation is that described by Putnam and Merritt<sup>23</sup> many years ago in adults wherein "dullness" was described as an epileptic equivalent. These individuals did not show the typical spike wave pattern on the EEG during these periods of altered behavior, but they had a history of seizures and the EEG was grossly abnormal

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during their period of impaired responsiveness. More recently, in 1960 Goldensohn and Gold<sup>14</sup> presented a series of adult cases with fairly prolonged states of altered behavior and semiconsciousness accompanied by spikes and slow activity on the EEG that was not of a typical spike wave pattern.

One can pass from this group of patients to an even more difficult problem, and that is the genesis of the behavioral abnormality seen occasionally as a probable postictal phenomenon in patients subject to seizures. The usual postictal state is a period of confusion lasting for a matter of moments to, at the most, the better part of an hour. There are many individuals described, however, in whom postictal states last for a matter of hours or even days.<sup>7, 8</sup> During this period of time, there is frequently an impaired state of consciousness, delirium, and confusion. Paranoid and psychotic states occur, although these will be discussed later. The electroencephalogram in these patients is almost invariably abnormal although its degree of abnormality does not coincide with the mental symptoms shown.

### Case History

L. M.: Beginning at age 14, this woman began to have tonic-clonic seizures and some form of minor seizures. On several occasions she was seen in the

emergency ward in an "uncooperative, obstinate, semi-stuporous" state. On one occasion, after repeated seizures, she was hospitalized in a state characterized by refusal to respond to questions except at intervals when she did so clearly; negativism was manifested by keeping her eyes tightly shut. Her EEG at this time (*Figure 1*) shows some nonspecific increase in slower activity. During the subsequent two days she remained negativistic, although gradually becoming more responsive. She had the illusion that her husband was in the bed next to her, but eventually recovered completely. EEG at this time is seen in *Figure 2*. Two years later she was found wandering the streets "semi-stuporous." After admission to the hospital she responded slowly and minimally and on occasions became extremely agitated.

The question posed by such patients is whether this striking, prolonged postictal behavioral abnormality in the presence of constant EEG abnormality is evidence of some continuing epileptiform disturbance deep in the brain, or whether it represents some kind of "exhaustion" phenomenon with absence of epileptiform activity. The answer is not known; the patients are rare and even rarer is the opportunity to study their brains with depth electrodes. Heath and others have done so in both epileptic and psychotic patients and claim to have found

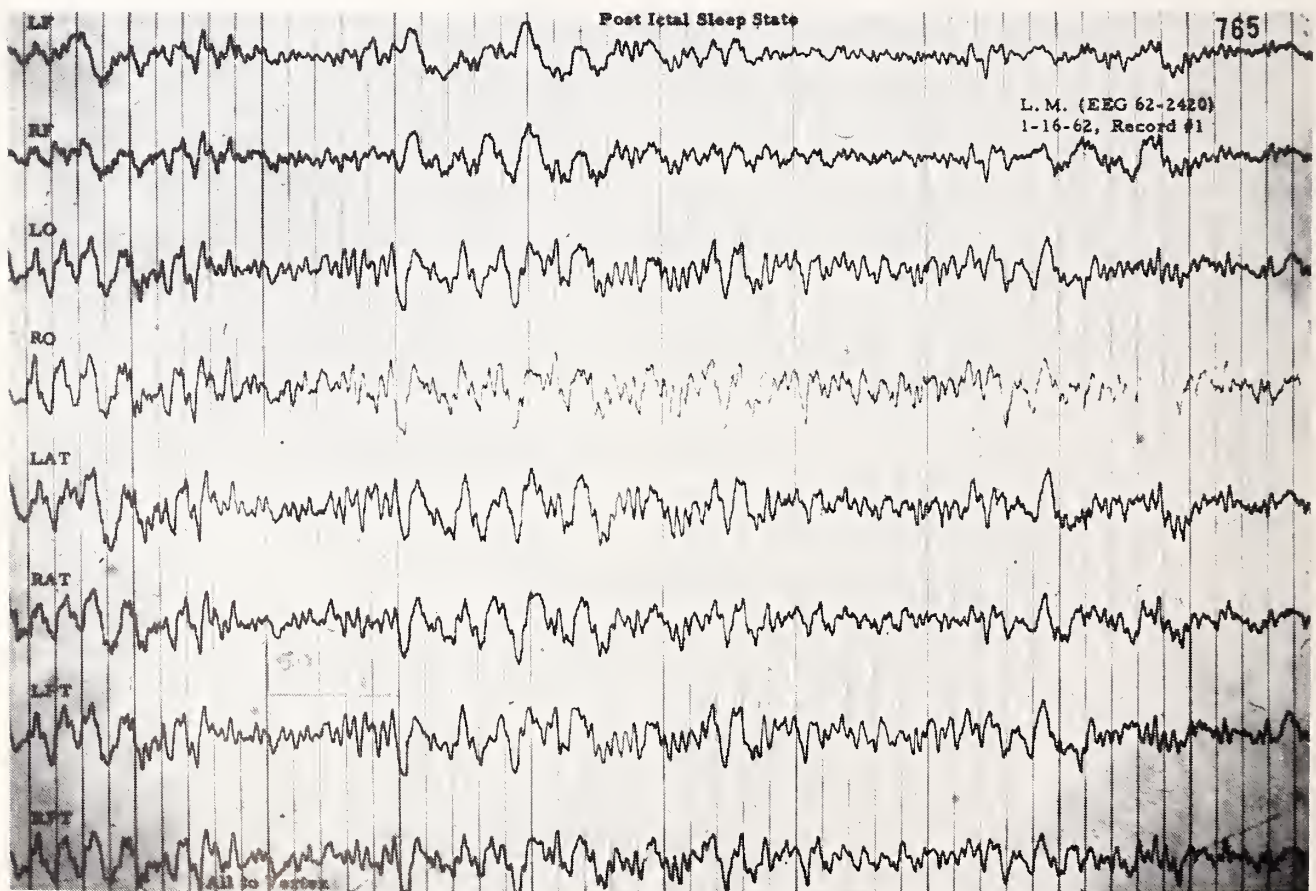


Figure 1. L. M. EEG during period of negativistic psychosis showing marked increase in slow activity.



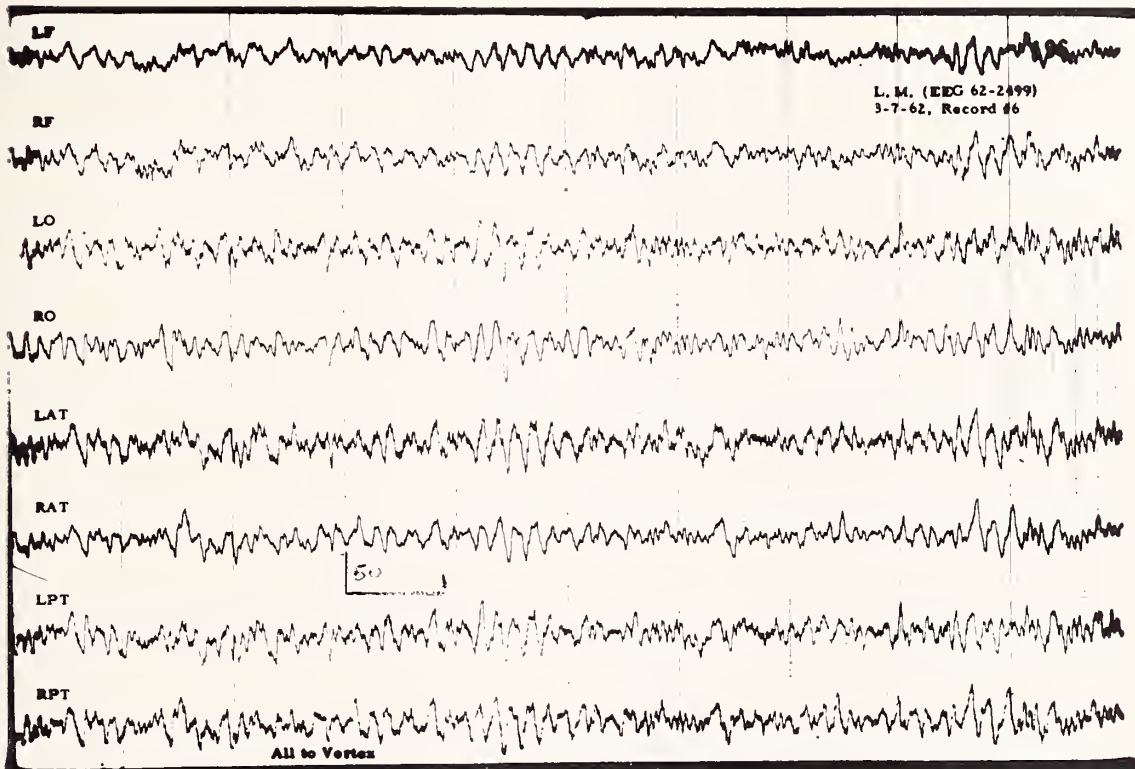


Figure 2. L. M. EEG two months later at time of normal behavior. Generalized slowing still present although less marked.

a definite correlation between subcortical spike activity (particularly in the septal area) and psychotic behavior.<sup>16</sup>

Another illness where relationship to epilepsy is obscure is the "periodic syndrome" of childhood. These attacks are characterized by various combinations of abdominal pain, nausea, vomiting, headache, pallor, sweating, and other symptoms of autonomic dysfunction. Many authors have felt that this clinical entity, which comprises cases variously labeled abdominal epilepsy, abdominal migraine, periodic syndrome, and autonomic epilepsy, is a "convulsive equivalent." In the large series of Chao *et al.*,<sup>4</sup> approximately one third of the patients had associated seizures of some more familiar type. However, other series have shown lower percentages and the high incidence in Chao's group may have been due to the artefact of patient referral. Various types of EEG abnormality were seen in approximately one half the patients in Chao's series. Comparison of various investigators' results is very difficult to perform in this field since the clinical features of the cases are often not well defined and vary from one series to another. Nevertheless, the fact remains that this group of children, however vaguely defined, does show a high incidence of severe EEG abnormalities. The EEG abnormalities are frequently paroxysmal as they are in epileptic patients, and are not infrequently found in asymptomatic relatives of the patients.<sup>32</sup> Some of these children do respond to

anticonvulsants and in many of them, as noted, other more well-known kinds of seizures occur. If one grants that these periodic attacks have some relationship to the paroxysmal EEG, the true pathophysiology is still unknown, i.e. what is the triggering mechanism, and what the relation of the EEG abnormality to the clinical features of autonomic dysfunction.

One of the most intriguing "borderlands" of epilepsy is the subject of its relationship to schizophrenia. In the first decades of the twentieth century there occurred a swing of opinion from the belief that dementia praecox and epilepsy were commonly associated, to the belief that this association was extremely rare. This confusing divergence of opinion brings us up approximately into the EEG era and also to the period when more careful analyses of the content of abnormal psychological states occurring in epileptics began to be described. In the past 20 years a great deal of literature has accumulated discussing the correlation between electroencephalographic abnormality and psychosis or thought disorder. There seems little question that a variety of severe electroencephalographic abnormalities are more common in the population with psychosis than in control groups. This has been known the longest concerning the catatonic population,<sup>29</sup> but it is also true of all types of psychosis, and of schizophrenia in particular.<sup>6, 17</sup> It is difficult to find agreement as to the actual percentages with which various kinds

of EEG abnormalities occur but certainly at least 10 per cent have clearly paroxysmal abnormalities while another 10 per cent will have focal abnormalities in the temporal area. To return to the original question, what is the significance of this information to the field of epilepsy, if any? Do the EEG disturbances seen in these severe psychiatric states signal an "epileptic" physiological event?

To add further data to consideration of this problem we must look more narrowly at the clinical relationship of epilepsy and psychosis. It seems clear that various types of psychoses do occur in epileptic patients with greater frequency than in control populations, but there are striking differences of opinion about two particular points in this field—(1) whether the psychoses are specifically correlated with temporal lobe epilepsy and temporal lobe foci in the EEG, and (2) whether there is an alteration temporally between psychotic states and seizures.

The "spike" abnormality is the EEG sign of an irritative lesion, presumably the site of underlying electrical discharge, and the temporal lobe spike is a familiar finding in patients with psychomotor seizures. Some workers have also found it a characteristic of the EEG's of a group of psychotic patients, particularly those subject to aggressive outbursts.<sup>28</sup> Despite some controversy as to the correlation of EEG spike phenomenon with specific psychiatric syndromes,<sup>25</sup> there is rather extensive literature documenting the appearance of psychiatric phenomena in patients with temporal lobe epilepsy. In 1957, D. A. Pond<sup>22</sup> discussed this subject in some detail, describing a group of patients with psychosis and seizures; all had epilepsy arising from the temporal lobe with complex auras and temporal lobe EEG foci. Slater *et al.*<sup>24</sup> in 1963 described 69 patients from National Hospital at Queen's Square and Maudsley Hospital, all of whom had an unequivocal diagnosis of epilepsy clinically and also had schizophrenia as diagnosed by an experienced psychiatrist. Neither the EEG nor the type of epilepsy were discussed in this paper except that it is stated that *only* seven of the 69 cases had centrencephalic epilepsy, all others having temporal lobe seizures. Dr. Slater's conclusions were that psychoses developing in these individuals could not be differentiated from schizophrenic psychoses. They seemed to develop in those individuals who had had epilepsy for a prolonged period of time, and that there was no close correlation between frequency of fits and the onset of psychosis.

The second controversial point mentioned in the previous paragraph, namely the relation in time between periods of seizures and psychotic states, is dealt with in a recent excellent study by Flor-Henry.<sup>9</sup> He found most strikingly that the occurrence of

frequent psychomotor seizures was inversely correlated with psychosis. He described also finding epilepsy with a focus in *non-dominant* temporal lobe associated with *manic depressive* and of the *dominant temporal* lobe with *schizophrenic* disturbances. When the epileptic focus was in the dominant temporal lobe there was a much more prominent tendency toward psychosis.

Alternation between psychotic disturbances and seizures had been previously noted by Landolt *et al.*<sup>19</sup> These workers described periods of seizures, with abnormal EEG's, alternating with periods of psychosis during which EEG's were normal—a phenomenon they labeled "forced normalization." Glaser,<sup>13</sup> however, in his study of temporal lobe epilepsy and psychosis states he could not find this alternation.

Complex as is the relationship of epilepsy and EEG abnormality to psychosis, its place in the field of behavioral disorders in children is even more difficult to evaluate. Many studies over the past 20 years have shown that children with severe behavior disorders and in particular the hyperkinetic syndrome show EEG abnormalities in a fairly high percentage of cases, the reported incidence being between 35 and 75 per cent. Two recent studies have approached the problems raised by this data in a rather sophisticated manner and have come to somewhat different conclusions. Stevens and coworkers<sup>27</sup> studied a large group of patients referred to a clinic for children with disturbed behavior and data was systematically gathered concerning the child's birth, neonatal period, development, systemic illness, family history, psycho-social history, and socio-economic status, in addition to a careful analysis of the EEG in which specific features were detailed. The same type of evaluation was carried out on two control groups of school children, in one group of which both teachers and parents considered the children normal with respect to the behavioral variables and a second control group in which there was disagreement between parents and teachers as to normality. Overall abnormal EEG's were found in 47 per cent of the behavior problem children, 9 per cent of the control group one (those in which both parents and teachers reported normal behavior) and in 19 per cent of the control group two (in which either parent or teacher reported abnormal behavior).

Rather striking was the *failure* to differentiate clinical items that correlated with a distinctly abnormal EEG in the children with behavioral disorders. Only a few of the 144 non-EEG items, (clumsiness and enuresis, to name two) were correlated with distinctly abnormal EEG's (as compared to children with normal EEG's). It is of passing interest that compulsiveness was more frequent among children with normal EEG's. These workers did



find, however, correlations with *specific EEG abnormalities* and *specific abnormal clinical items*, for example, defective dominance, ideation, speech and memory problems, and withdrawal from environment correlated positively with abnormality in the parietal area. Interestingly enough, there were few differences in retrospective birth or medical histories between experimental children and controls, and there was a very low incidence of overt clinical seizures among the experimental children (3 per cent). Perhaps most surprising was data indicating that children with the most abnormal EEG's showed little difference in incidence of somatic predisposing factors (head injury, neurological signs) when compared with equally disturbed children without EEG abnormalities. On the other hand, disturbed family environment from early childhood was positively correlated with amplitude abnormalities over the frontal areas. The authors suggest that the possibility of an adverse early environment affecting the maturation of the EEG is not outside the range of possibility.

The study by Dr. Small<sup>26</sup> of mentally ill children with EEG abnormalities covered in general a different clinical group including both psychotic and "behavior disorders" in children. Dr. Small's conclusions in comparing subjects with normal EEG's and similarly age, and sex-matched patients with abnormal EEG's were that the EEG was highly correlated with signs of CNS pathology and that patients with normal EEG's, had a lower incidence of speech and visual defects, enuresis, hyperactivity, destructive behavior, and impaired coordination. They found a definite coexistence of prenatal and paranatal complications, intellectual impairment, developmental delays, convulsive phenomena, positive neurological signs, and epileptiform EEG abnormalities, and an additional correlation between relative lack of evidence of CNS disorder, normal or nonepileptiform EEG's and a positive family history of psychopathology. Looking at the data of these two recent studies, what can we say in conclusion about the significance of correlation between behavior disorders and an abnormal EEG, particularly a paroxysmal abnormal EEG? Stevens' findings would suggest that there is little indication that the behavior disorder is a manifestation of "epilepsy" caused by damaged brain. Small's data would suggest the contrary.

It is of great interest that both studies have found *enuresis* highly correlated with abnormal EEG's, a matter worthy of some comment. A recent study by Lempp<sup>20</sup> of 88 cases of nocturnal enuresis describes 60 of them as showing abnormal EEG's, and in 30 an epileptiform type of abnormality. Other workers have found a much smaller incidence, but certainly some cases of nocturnal enuresis apparently do

have a relationship to seizure phenomena. Another syndrome of some relevance to epilepsy is that of "night terrors"—a moderately common complaint of childhood studied extensively by French and Italian workers. It appears that there are definitely two types of night terrors in children which can be differentiated clinically by careful evaluation of signs and symptoms. In the one, the activity of the child is stereotyped with grinding of teeth, and screaming; the child is totally amnesic of the episode the following day. Such episodes are correlated to a high degree with EEG abnormality of an epileptic variety, with a past history of predisposing neurological factors, and a relative absence of neurosis. In other patients, episodes are characterized by apparent awakening, screaming with evidence of anxiety and behavior apparently responsive to frightening stimuli. These children remember the episodes as "nightmares." Such children usually have other signs of emotional instability, have no EEG abnormalities, and their condition is thought not to be related to epilepsy.<sup>11, 33</sup>

One of the most perplexing problems in the area under discussion is the relationship between epilepsy and migraine, a subject distinguished by a fairly large body of literature and markedly conflicting points of view. On a superficial level there would appear to be reasons for thinking that these two entities might be related to the same pathophysiological process. Both are episodic reversible disorders, the one definitely a paroxysmal disturbance of the central nervous system, the other frequently occurring with CNS manifestations. Lennox<sup>21</sup> found in his monumental series of cases, that the existence of seizures in migraine patients was considerably above that in the general population but was still not of great frequency. The great British clinician, Gowers,<sup>15</sup> of course, thought there was a definite connection between the two entities and described cases in which migrainous and epileptic attacks alternated "one replacing the other in the same subject." Some workers, however, have questioned the relationship of epilepsy and migraine. Other recent studies have confirmed Gower's and Lennox's older findings that the incidence of epilepsy in migraine patients is somewhat greater than the control group.<sup>1, 18</sup> All of this, however, tells us little and the interesting question recurs: Is there much evidence for a pathophysiological event such as we assume underlies epilepsy also underlying migrainous attacks?

Relevant to the answer to this question is the subject of the EEG abnormalities seen in migraine. Most patients with migraine have normal EEG's but there is a small number with a distinct abnormality. Weil has claimed that this patient group whom he labeled "dysrhythmic migraine" tended to be those with the

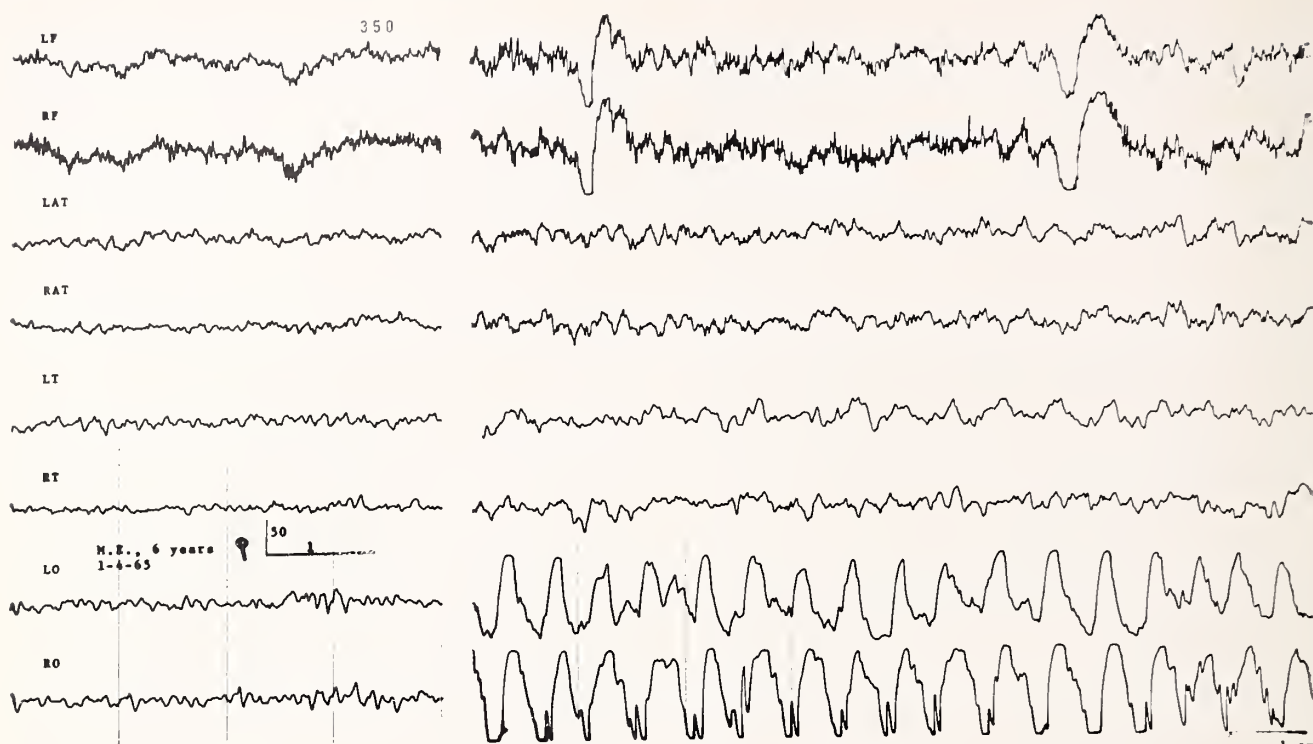


Figure 3. M. E. Ten-year-old boy with headaches. EEG during period without headache. On the left normal resting record; on the right 3 minutes after end of photic stimulation, continuing paroxysmal abnormality in occipital areas without clinical abnormality.

maximal amount of neurological abnormality associated with headache.<sup>30</sup> During severe migrainous attacks several workers have documented the presence of severe focal abnormalities in the electroencephalogram. One hypothesis to explain these abnormalities would be that of Wolff<sup>31</sup> namely, that intracerebral vasoconstriction occurs and the EEG records the effect of localized cerebral ischemia.

There is other EEG evidence, however, which suggests that the relationship between migraine and electrical rhythms of the brain is considerably more complex. Almost all series of EEG's in migrainous children, for example, have shown a fairly high percentage of abnormalities in periods between headaches, many of the EEG's being clearly paroxysmal in nature. In Figure 3 is a sample of the EEG of a 10-year-old boy, subject to migraine but not to seizures. The record shows on the left a normal resting record, and on the right a segment of the extremely abnormal prolonged paroxysmal response to photic stimulation, particularly in the occipital areas (last two channels). There is also increased incidence of paroxysmal abnormalities in the asymptomatic siblings of such migrainous children. Certainly periodic headache is a usual component of the "periodic syndrome" of childhood which includes also episodic vomiting, abdominal pain, pallor, and has been called in the past "abdominal migraine" and even "abdominal epilepsy." It would appear, then, evidence now stands in favor of the fact that many

children who are subject to migraine have also a tendency toward abnormal cerebral physiology at least as manifested by the abnormal EEG. The first event in migraine may then well be, although it has never been proven, some abnormal central nervous system electrical discharge which then sets off excessive discharges in the hypothalamic autonomic nervous system outflow resulting in the familiar train of events—vasodilatation of scalp vessels, vomiting, and other autonomic events.

Whether the central nervous system deficits seen in classic and complicated migraine, namely, visual scotomata, paresthesias or paresis of the extremities, and visual field defects, are due to intracerebral vasoconstriction or other mechanisms, is actually not firmly established. It has been suggested that the EEG seen in clinical neurological phenomena occurring before the migraine attack may be due to cerebral dysfunction caused by spreading depression, and not by cerebral ischemia. Cohn<sup>5</sup> in 1949 commented that the aura in migraine is associated with cortical firing differing only in degree but not in kind from other paroxysmal cortical discharges.

## References

1. Barolin, G. S.: Migraines and epilepsies. A relationship? *Epilepsia* 7:53-66, 1966.
2. Bärtschi-Rochaix, W.: Migräne und epilepsie. *Schweiz. med. Wschr.* 84:1139-1144, 1954.
3. Bornstein, M.; Coddon, D., and Song, S.: Prolonged alteration in behavior associated with a continuous electro-

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# Community Psychiatry

## *Changes in Psychiatric Education for Community Service*

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AMERICAN PSYCHIATRY has witnessed a decade of immense change in the 1960's—change in the community at large as well as within the field of psychiatry. Perhaps the most broad-reaching departure has been the emphasis given to new systems of planning and delivering mental health care—or what is called community psychiatry. Though preceded by a long developmental history, it was President Kennedy's message<sup>1</sup> to the Congress in 1963 which set in motion the essential social legislation encouraging the development of comprehensive community mental health centers throughout the nation. "We need a new type of health facility, one which will return mental health care to the mainstream of American medicine, and at the same time upgrade mental health services." The shift, then, was away from large and geographically remote state hospitals, toward community psychiatric services readily accessible to a designated population. Such centers would be visible to the community and responsive to its needs in order to facilitate early recognition of problems before breakdown, and they would offer consultation to other community agencies. "Prevention as well as treatment will be a major activity."

Now, eight years later, comprehensive community mental health centers have flourished across the country; more than 250 are already funded and operational. With such rapid growth, psychiatry has seemed to leap beyond its traditional boundaries of concern with the diagnosis and treatment of mental illness.<sup>2</sup> The focus in some cases has shifted to social change and community improvement and to what has been called "mental health without walls."<sup>3</sup> These rapidly accelerating developments raise new and challenging questions about the legitimate scope of psychiatric education.

The purpose of this paper will be to sketch some of the conceptual dilemmas relevant to education in community psychiatry, and then to describe develop-

ments in community psychiatric education in the Department of Psychiatry, University of Kansas Medical Center.

### Some Conceptual Dilemmas

The goals of community psychiatry are often expressed in terms of the public health concepts of primary, secondary and tertiary prevention. Used in this sense, primary prevention refers to reducing

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**It is the task of educators to sort out the issues critical to the growth of those they educate. Psychiatric training programs must sort out those elements which are critical to the identity of the psychiatrist and provide them in a climate which facilitates professional growth. Such a task involves a process of continuing change and refinement. From our present vantage point the acquisition of competence in community psychiatry is an important element in the psychiatrist's identity.**

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harmful factors for the individual or the community at large in order to decrease the *rate* of mental breakdown. Secondary prevention means reducing the *prevalence* of mental disorder by shortening illness through early case finding and effective treatment. Tertiary prevention is achieved by reducing or confining the *sequelae* of mental disorder through effective management, follow-up and rehabilitation.

The consideration of such goals has induced some bitter battles over where to place appropriate emphasis in programming mental health services. Critics of preventive approaches<sup>4</sup> point out that as yet few specific etiologies have been established for mental illness and therefore heavy commitments toward primary prevention are ill-advised. They stress that aside from theoretical assertions there is little documented evidence of the effectiveness of such programs. These detractors express concern that the public may rebel in its support if there is a failure to

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demonstrate an effective yield from such "ephemera."

Champions of preventive care<sup>5</sup> point to carefully planned intervention in broad social contexts as the only hope of dealing successfully with so massive an adversary as mental illness. They see direct clinical care of existing illness as always resulting in insufficient resources and personnel. To them the situation is analagous to a man feverishly bailing out a sinking life boat with a thimble—noble, perhaps, but a waste of energy.

Though conceding difficulties with the demonstration that preventive programs are useful and effective, they point to the uncertainty which remains in documenting the effectiveness of psychotherapy and other well known treatment modalities in psychiatry. Preventive programs need not be vague, global nor ill-conceived as their critics would portray them. Rather, there is ample opportunity to design programs which fit specific needs in areas where causal relationships are well understood.

What appears to be ignored in these arguments is the fact that such dichotomies are largely rhetorical; the issues of prevention and service are not exclusive but co-extensive. Where such battles are waged openly and with vehemence, one is likely to find rationales peculiar to vested professional interests.

In a recent paper on trends in psychiatric education, Bandler points out the relevance as well as the traps involved in such debates. He cuts through the rhetorically polarized conflict by conceptualizing four interacting models of community psychiatry which relate to each other as concentrically widening circles. Since through these models he makes a plea for an expanded conception of the psychiatrist, it may be useful to review the models here briefly.

The inner circle or core is the medical—diagnostic—treatment model. Traditional in scope, it represents modal psychiatric practice and concern for the episode of illness and the individual patient. Around the core is a wider circle of developmental perspective which deals with biological and psychological development. It considers the longitudinal processes which influence discrete episodic disturbances of mental functioning and stresses adaptive strengths as well as defensive failures. The organizational model encircles the developmental. It considers the relationships within groups or communities of people and focuses on the importance these relationships play therapeutically. It stresses decision-making, role-functioning and responsibility to others as well as self. The final outer ring Bandler describes is an ecological one, a model stressing balance and interaction not only within the health system but within the community at large. It is this model which permits us to conceptualize rat control, drunken driving and unemployment as legitimate mental health concerns.

The value of such concentric models, it would appear, rests with the inclusive, not exclusive, implications which pertain to the education of psychiatric residents and medical students. They force us to recognize that mental health care means reaching beyond the individual patient without abandoning him. It means providing comprehensive and coordinated services so that the communities' needs are met and the individual's needs are not squelched in a morass of bureaucratic red tape. The psychiatrist we are training cannot hope to provide such breadth of service alone, but he must be able to conceptualize it with fluency, and know how to work with others in the effort to achieve it.

How one translates such global goals to a process of education . . . how, particularly within the constraints of limited time and competing demands, is a question which evades a satisfactory, all-inclusive answer. But certainly we know that the question will not be settled by evading its challenge. To begin we offer a supervised exposure to community psychiatry in an effort to provide a sufficiently intensive experience with the gamut of community clinical and organizational problems.

### **Training Experiences in Community Psychiatry**

Since the early 1960's the department of psychiatry of the University of Kansas Medical Center has been involved with training experiences in community psychiatry. Faculty from the department have served as consultants and staff members at two nearby community mental health centers. Through affiliations with the Wyandotte County Mental Health and Guidance Center, and the Johnson County Mental Health Center, a senior resident spends part of his time for six months as a staff member in community psychiatry. In the past several years, medical students with an interest in community health programs, though not necessarily psychiatry, have worked out special elective arrangements at the two centers. Now, with the new medical school curriculum, a student may elect a six-week, full-time rotation in community psychiatry any time following the completion of his basic psychiatry course.

The exposure the resident or student receives is geared to his level of clinical and psychiatric experience. Teaching and supervision, though coordinated by a psychiatrist, are multidisciplinary. That is, he may learn what to look for when making a home visit from an experienced nurse with a public health background. A social worker may guide him in deciding who to approach at a particular community agency with a clinical problem. Since the centers are involved in the training of social workers, psychologists and nurses, he shares in what they are learning as well. Through team meetings and joint evalua-



tions of both individual and community problems, he shares responsibilities with other mental health professionals learning to trust and respect their skills and judgments.

His time is divided among three areas of concentration. The first involves the evaluation and disposition of clinical problems. Efforts are made to select cases which he might not ordinarily see in other phases of his training or which will involve communication with other community agencies (e.g., vocational rehabilitation, social security administration and welfare department). Disposition in such cases often provides experience in coalescing community resources.

A second area of concentration involves an experience with community consultation. The choices open to the resident are varied, with the option to select a consultative experience which suits his particular needs or interests. His role may involve case identification, helping the consultee to provide treatment, encouraging the consultee to refer the case for treatment, and collaborative treatment of the case with the consultee. He may also help the consultee with staff development and change. His chosen consultation may involve such diverse experiences as trying to upgrade conditions in a city jail, working with the court to find alternatives to jailing alcoholic offenders and providing counsel to the domestic relations staff of the police department. On one occasion a resident served as a consultant to the mayor of a small, somewhat geographically isolated community. The work involved him in meeting with the community power structure, the schools, and a community action program. Serving in this capacity he found himself at the interface of what were at times competing systems in the community.

The remaining time is spent in supervision, the ongoing staff development seminars, team meetings and other experiences by which he attempts to learn how a mental health center itself functions.

## References

1. Kennedy, J. F.: Message from The President of the United States relative to Mental Illness and Mental Retardation, 88th Congress, First Session, House of Representatives, Document No. 59, February, 1963.
2. Whittington, H. G.: Social and community psychiatry: Some hard questions face us (Editorial). *Amer. J. Psychiat.* 126:1487-1488, 1970.
3. Fishman, J. R., and McCormack, J.: "Mental health without walls": community mental health in the ghetto. *Amer. J. Psychiat.* 126:1461-1467, 1970.
4. Jepson, W. W.: Metropolitan mental health center development. In *The Practice of Community Mental Health*, edited by H. Grunebaum. Boston, Little, Brown and Company, 1970, p. 439-467.
5. Rae-Grant, Q., and Rae-Grant, N. I.: Preventive care. In *The Practice of Community Mental Health*, edited by H. Grunebaum. Boston, Little, Brown and Company, 1970, p. 247-276.
6. Bandler, B.: Current trends in psychiatric education. *Amer. J. Psychiat.* 127:585-590, 1970.

## Borderlands of Epilepsy

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- encephalographic (spike and dome) abnormality. *Neurology* 6:444-448, 1956.
4. Chao, D.; Sexton, J. A., and Davis, S. D.: Convulsive equivalent syndrome of childhood. *J. Pediat.* 64:499-508, 1964.
5. Cohn, R.: *Clinical Electroencephalography*, 1st edition. New York, McGraw-Hill, 1949.
6. Corriol, J., and Bert, J.: Electroencéphalographie et schizophrénie. Étude des seuils convulsivants. *Ann. Med. Psychol.* 108:588-597, 1950.
7. Dongier, S.: Statistical study of clinical and electroencephalographic manifestations of 536 psychotic episodes occurring in 516 epileptics between clinical seizures. *Epilepsia* 1:117-142, 1959.
8. Euziere, J.; Passouant, P.; Latour, H., and Cadillac, J.: Les comas post-critiques des épileptiques. *Sem. Hop., Paris* 28:2181-2186, 1952.
9. Flor-Henry, P.: Psychosis and temporal lobe epilepsy. *Epilepsia* 10:363-395, 1969.
10. Friedman, A. P., and Merritt, H. H.: *Headache*. Philadelphia, Davis, 1959.
11. Fuster, B.; Castells, C., and Etcheverry, M.: Epileptic sleep terrors. *Neurology* 4:531-540, 1954.
12. Gibbs, F. A., and Gibbs, E. L.: *Atlas of Electroencephalography, Vol. 3 (Neurological and Psychiatric Disorders)*. Reading, Mass., Addison-Wesley, 1964.
13. Glaser, G. H.: The problem of psychosis in psychomotor temporal lobe epileptics. *Epilepsia* 5:271-278, 1964.
14. Goldensohn, E. S., and Gold, A. P.: Prolonged behavioral disturbances as ictal phenomena. *Neurology* 10:1-9, 1960.
15. Gowers, Sir William: *Borderlands of Epilepsy*. Philadelphia, Blakiston's Son and Co., 1907.
16. Heath, R. G., and Guerrero-Figueroa, R.: Psychotic behavior with evoked septal dysrhythmia: effects of intracerebral acetylcholine and gamma aminobutyric acid. *Amer. J. Psychiat.* 121:1080-1086, 1965.
17. Jasper, H. H.; Fitzpatrick, C. P., and Solomon, P.: Analogies and opposites in schizophrenia and epilepsy. Electroencephalographic and clinical studies. *Amer. J. Psychiat.* 95:835-851, 1939.
18. Lance, J. W., and Anthony, M.: Some clinical aspects of migraine. A prospective survey of 500 patients. *Arch. Neurol.* 15:356-361, 1966.
19. Landolt, H.: Some clinical electroencephalographical correlations in epileptic psychoses (twilight states). *Electroenceph. clin. Neurophysiol.* 5:121, 1953.
20. Lempp, R.: Enuresis nocturna und Epilepsie. *Zeitschrift für Kinderheilkunde* 92:324-329, 1965.
21. Lennox, W. G., and Lennox, M. A.: *Epilepsy and Related Disorders*. Boston, Little, Brown & Co., 1960.
22. Pond, D. A.: Psychiatric aspects of epilepsy. *J. Ind. Med. Prof.* 3:1441-1451, 1957.
23. Putnam, T. J., and Merritt, H. H.: Dullness as an epileptic equivalent. *Arch. Neurol. Psychiat.* 45:797-813, 1941.
24. Slater, E.; Beard, W. A., and Glithero, E.: The schizophrenia-like psychoses of epilepsy. *Brit J. Psychiat.* 109:95-150, 1963.
25. Small, J. G., and Small, I. F.: EEG spikes in non-epileptic psychiatric patients. *Dis. Nerv. Syst.* 28:523-525, 1967.
26. Small, J. G.: Epileptiform electroencephalographic abnormalities in mentally ill children. *J. Nerv. Ment. Dis.* 147:341-348, 1968.
27. Stevens, J. R.; Sachdev, K., and Milstein, V.: Behavior disorders of childhood and the electroencephalogram. *Arch. Neurol.* 18:160-177, 1968.
28. Treffert, D. A.: The psychiatric patient with an EEG temporal lobe focus. *Amer. J. Psychiat.* 120:765-771, 1964.

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# Grading the Rehabilitation Effort

## *An Objective Evaluation Method of Rehabilitation Efforts in the Physically Disabled*

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THE TECHNIQUES of rehabilitation medicine are so frequently beclouded with impreciseness, unrealistic goals, multihued philosophies, and lack of objectivity in measurement of accomplishment that it is difficult to assess their real value. The complex nature of the multidisciplinary measures employed render the evaluation of the achievements much more difficult than in other aspects of medical practice—the grading of the cure rate of a given antibiotic in the treatment of a given infection, for example. Efforts to provide objectivity to the effectiveness of treatment measures in rehabilitation medicine have usually resulted in a score sheet of such complexity as not to be practical, or have failed to provide convincing evidence as to their real value. To a certain extent these deficiencies may also be traced to the fallacious concept that single treatment philosophies are the rehabilitation program, or even that rehabilitation itself is a single goal, achievement, or entity. Nevertheless, with due recognition of ever-present shortcomings, there still needs to be measurement criteria which are simple, cover the basic essentials of rehabilitation achievements, can be objectified, can be accurately and uniformly rated by several individuals, represent unchanging standards, and which have precision of meaning as related to the rehabilitation process.

The purpose of this communication is to summarize our experience with an evaluation based on the criteria of essential self-care activities. These criteria relate to the degree of independence of the disabled individual and appear to satisfy many of the desirable requirements noted.

### Material

Twenty-three consecutive patients with a variety of severe physical disabilities were admitted to the Physical Medicine and Rehabilitation Service for intensive rehabilitation efforts. They were evaluated at the beginning, at weekly intervals during, and at the conclusion of the rehabilitation program by the modified Kenny Self-Care Evaluation Method.

The study included the following clinical conditions: Postcerebral contusion (brain injury), three patients; postcerebrovascular accident, six; spinal cord injury and paraplegic state, seven; spinal cord injury and quadriplegic state, two; Parkinson's disease, two; one elderly patient with an above-knee amputation; one patient with amyotrophic lateral sclerosis; and one patient with severe osteoarthritis.

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**Twenty-three patients with severe physical disabilities were evaluated by an objective method of grading the rehabilitation effort, the Kenny Self-Care Evaluation. The method is concise, simple, and is duplicable by different rating individuals. In the interest of efficient utilization of time on the part of the rehabilitation personnel, this objective rating method has much to commend it.**

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### Method

**THE EVALUATION FORM.** The rating form devised by Schoening and Iversen<sup>1</sup> with some modification has been employed for this study. It considers the basic essentials of self-care ability to consist of six areas in which function can be graded objectively from dependence to independence. As shown in *Figure 1*, these consist of bed, feeding, personal hygiene, dressing, transfer, and locomotion abilities, arranged somewhat on the scale of less complex to the more complex functions.

**GRADING OF FUNCTION.** The use of adjectival terms in grading was avoided, and in their place a simple numerical spectrum of 0-4 was employed, as shown in *Figure 1*. The extremes, 0 and 4, represent no problem in objective grading. Grades 1 and 3, likewise, seldom pose any problem in scoring, as they are carefully defined. Functional abilities not meeting any of the four criteria would be scored as 2; hence, this rating also seldom produced disagreement among different evaluators. By this method, the maximum

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University of Kansas Medical Center  
Physical Medicine and Rehabilitation Service

SELF-CARE EVALUATION FORM

FUNCTION

Date

BED	a. Move in bed	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	b. Rise and sit	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
FEEDING		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
PERSONAL HYGIENE	a. Face, hair, arms	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	b. Trunk & Perineum	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	c. Lower extremities	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	d. Bladder program	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	e. Bowel program	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
DRESS- ING	a. Upper trunk & arms	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	b. Lower trunk & legs	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	c. Feet	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
ACTIV- ITIES	a. Sitting	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	b. Standing	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	c. Toilet	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
LOCO- MOTION	a. Wheelchair	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	b. Walking	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	c. Stairs, curbs	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
SCORE		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Criteria: 0 = No ability, or not tested.  
1 = Completion of one step of task, even with assistance.  
2 = Accomplishment of more than one step.  
3 = Independence in all but one or two steps.  
4 = Self-sufficiency, with or without adaptive devices.

Figure 1. Illustrating the essential components of the six basic areas of self-care, together with the criteria necessary for uniform scoring.

score for independence in self-care was 24. Less than this total score indicated disability, and the six areas graded indicated the specific area or areas of disability.

**EVALUATION OF DISMISSAL STATUS.** Aside from the Self-Care Score, the patients were graded at the time of discharge according to the following simple categories:

a = self-sufficiency

b = minor dependence at the home level with deficiencies in daily needs met by nonprofessional or home help only.

c = major dependence with daily needs met only by professional management in an extended care facility or nursing home.

The results are shown in *Tables 1 and 2*.

## Discussion

The Kenny Self-Care Form, as modified, posed no real problem in uniformity of rating among the

personnel working with the patients. This duplicability of grading alone highly commends the test. It is short, concise, and provides a ready means of comparison of progress on a single sheet. Breaking an apparently severe physical disability into its component parts allows identification of problem areas. Once identified, concentrated attention to such areas often makes specific function possible, or, conversely,

TABLE 1  
GENERAL

Category	Number of Patients	Self-Care Score	
		BEGINNING	END
a	8	12.9	22.5
b	10	14.9	20.3
c	5	6.9	9.1

TABLE 2  
BY CONDITION

Condition	Number of Patients	Self-Care Score		Improvement Category		
		BEGINNING	END	a	b	c
Paraplegia	7	13.9	21.7	6	1	0
Quadriplegia	2	0.6	11.6	0	1	1
Hemiplegia	6	13.4	17.3	0	3	3
Brain Injury	3	17.8	23.4	2	1	0
Parkinsonism	2	13.9	17.6	0	2	0
Amputee (age 80)	1	20.9	21.9	0	1	0
Osteoarthritis	1	20.3	20.3	0	1	0
ALS	1	2.5	2.5	0	0	1

identifies areas where lack of progress and achievement suggest therapy abandonment in the interest of efficient utilization of treatment time. That point at which the total score levels off calls for revision of the treatment regimen or may signal the end of further hospitalization for rehabilitative purposes. The latter safeguard is a necessary consideration, as empathy for the patient's problems may otherwise interfere with the most economical use of available resources.

One should not lose sight of the fact that of the 23 patients, 18 were able to be dismissed to their homes, and professional assistance at either public or private expense was unnecessary for continuing their daily living. However, it will be noted that the average self-care score for those attaining self-sufficiency did not differ markedly from those cared for in the home environment. While this is likely due to the inadequate numbers comprising this study, it is our experience that those patients with self-care scores below 14.8 at the completion of the rehabilitation effort will require continuing care with profes-

sional help. Patients with scores above 14.8 can be trained to carry out the activities of daily living at the home level with nonprofessional help, and may be motivated to achieve complete independence despite severe organic disability. The young paraplegic patients, for example, approached a score of 22 and were completely independent, despite an unchanged neurologic state. Patients scoring significantly below the 14.8 level at the beginning of the rehabilitation program were often converted to self-sufficiency by the rehabilitation effort. Finally, those patients in Dismissal Category C began their rehabilitation program at a low level and tended to remain so.

All of this is by way of saying that rehabilitation efforts can be channeled, controlled, and graded objectively at the clinical level by an evaluation form similar to the Kenny Self-Care Evaluation Method.

## Reference

1. Schoening, H. P., and Iversen, I. A.: Numerical scoring of self-care status: A study of the Kenny self-care evaluation. *Arch. Phys. Med. & Rehab.* 49:221-229, April 1968.



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## *The President's Message*

Peer review is not a new concept. We in medicine have experienced peer review ever since we entered medical school.

Documentation of peer review for the satisfaction of third party financing of health care is a more recent need. Physicians are being forced into accepting this documentation with the advent of government into the health care picture. We must help guide the direction this documentation takes if we want the true peer review concept to succeed. It must succeed if we want our patients to receive high quality, most efficient, equal and economical medical care.

Formation of a Foundation for Medical Care by a medical society is presently the most effective instrument available to the medical profession to serve the purpose of documentation of peer review and utilization. The foundation organization makes available to the medical profession the opportunity to effectively guide other areas relating to the multiple facets of health care delivery, quality, equality and economy. You will soon be receiving additional information outlining how KMS can establish a foundation. This item may be discussed at the annual meeting in May.

We in medicine are faced with two choices:

We can wait and see what will happen in congressional action dealing with all phases of health care, then live with legislative politically expedient decisions, which may not be in the best interests of the patient;

OR We can make our position known on peer review and demonstrate our ability to provide and document our actions for the benefit of our patients and for our own professional self-respect as well as for the federal government and other third party financing.

I quote from report C-70 of the Council on Medical Service of the AMA: "The Council on Medical



Service knows of no greater challenge facing the profession today than to secure universal acceptance and application of the peer review concept as the most meaningful method for creating a public awareness of medicine's efforts to assure high quality of health services at a reasonable cost, slowing the rate of escalation in health care charges, stimulating health insurance organizations to make broader protection available to more people, and retaining professional control in patient-physician fiscal and economic relationships."

THE CHOICE IS OURS!!!!

*Francis J. Collino*

President



## *The Teacher Is Taught*

This being the annual KUMC issue, it seems fitting to propose a thought on the training of physicians which will be considered rank heresy in some quarters. Our proposition is that newly hatched physicians put in a certain amount of time in some teaching capacity before embarking on their careers. This can be accomplished in any one of a number of areas and obviously runs counter to the frequently suggested idea that every physician be required to put in a certain amount of time in general practice before entering a specialty program. In view of the general pressure being applied to get more people trained and out into practice quickly, neither idea is apt to be broadly adopted so we are safe in beating the drum for ours. There is nothing so satisfying as a cause which can be extolled without danger of being put to the test.

Exposure to general practice before specialization is usually suggested as a means of guaranteeing that the physician will ever after have a broad, compassionate and balanced view of the patient instead of the constricted, isolated, one-organ view usually attributed to the specialist. The fallacy in this concept, we suggest, is that the perspective is in the physician, not the practice. If he doesn't have the "whole patient" attitude by the time he finishes medical school, he isn't apt to get it in a brief and coerced term of service in general medicine.

The same plan has been suggested as a means of getting more physicians out to needy areas more quickly, though just how this is going to have any lasting effect without drawing this group of trainees away from the patients they would otherwise have been serving is not clear. Of course, the hope is that some would become so enamored of the backbreak-

ing, nerve-shredding life in general practice, they would choose to stay on, but this is contrary to experience. Again, it is in the physician, not the practice.

But what's this crackpot idea about teaching? Simply the fact, as anyone with any teaching experience knows, that the intellectual gymnastics required to project one's knowledge to another in intelligible form cannot fail to educate the teacher. There is a perspective to be developed here which may be less tangible but just as beneficial to a patient at some future time as the more pragmatic approach noted above. The greater insights a physician can gain by such experience, not only about his subject but about himself, will be rendered in highly practical terms in everything he does thereafter. This is not a plea for more academicians. It is recognition that the pressures of practice have an erosive effect on the academic base a physician must maintain if he is to continue to develop professionally.

It is easy to forget, under this pressure, that each patient is, in fact, a pupil, and his care is basically a matter of teaching. The patient who complains that his physician doesn't tell him anything or that he can't understand what he was told is saying that he wasn't *taught*. The physician who cannot teach his patient something of what is wrong with him, what he must do to recover from it, and how to avoid its return is failing his obligation as much as if he didn't know. We grant that this involves attitudes and capabilities that vary from person to person, and many do not require a specified course of term of service to acquire this ability. But what is it that is accomplished within the first years of a physician's independent service? He is applying on his own and



alone the knowledge that was passed on to him. The realities of practice are a tempering process by which some become so rigid, they cannot bend without cracking while others develop a resilient strength which withstands the physical, emotional and intellectual stress. The difference is in the alloys, and one of the prime ingredients in this mixture is the physician's recognition of his teaching obligation.

The physician's role as a teacher does not stop at the office door. It is apparent that the next few years will bring extension and formalization of the training of ancillary personnel. Parenthetically, and in recognition of what physicians have always done in the teaching area, it should be noted that this idea of paramedical assistants has been in use since the profession began. The difference today is that the whole scene is so expanded and complex that we have to divide up the services and give people titles so we can tell who is doing what. As preceptorships increase and affiliation programs are established, the reality of teaching will be brought closer to each individual physician. He need not fear the trends in medical practice or his own role in their development if he does not abdicate his responsibility in this field. How better can he make his influence felt and promote the principles he feels just?

So, even though we expect our brainchild to die aborning, it does at least offer the opportunity to remind ourselves that we come from teachers, we come as teachers, and hopefully we shall send others on as teachers.—D.E.G.

## Along the Bookshelf

### Clendening Medical Library

#### RECENT ACQUISITIONS

- Carnegie Commission on Higher Education. Higher education and the nation's health; policies for medical and dental education: a special report and recommendations. New York, McGraw-Hill, 1970.
- Edge, John R. Lectures in chest medicine. New York, American Elsevier Co., 1970.
- Goodman, Richard M. The face in genetic disorders. St. Louis, Mosby, 1970.
- Kraus, Hans. Clinical treatment of back and neck pain. New York, McGraw-Hill, 1970.
- Lewis, Howard R. The medical offenders. New York, Simon and Schuster, 1970.
- Robbins, Lewis C. How to practice prospective medicine. Indianapolis, Methodist Hospital of Indiana, 1970.
- Turpin, James W. A faraway country; the continuing story of Project Concern. New York, World Pub., 1970.

## NEW MEMBERS

*The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.*

- |  |   |
|--|---|
| <b>Loren L. Augustyn, M.D.</b><br>Student Health Services<br>Kansas S. Teachers College<br>Emporia, Kansas 66801 | <b>Alfred E. Krake, M.D.</b><br>Oberlin Clinic<br>Oberlin, Kansas 67749                     |
| <b>Harold Brathwaite, M.D.</b><br>10 N. James<br>Kansas City, Kansas 66101                                       | <b>Rene P. Lefebvre, M.D.</b><br>105 Medical Arts Building,<br>West<br>Topeka, Kansas 66604 |
| <b>Barry R. Cooper, M.D.</b><br>5500 Aberdeen<br>Shawnee Mission, Kansas<br>66205                                | <b>Juanito M. Melendres, M.D.</b><br>5949 Nieman Road<br>Shawnee Mission, Kansas<br>66203   |
| <b>Russell E. Cramm, M.D.</b><br>111 W. 10th<br>Hays, Kansas 67601   | <b>Donald E. Philgreen, M.D.</b><br>1302 S. Main<br>Ottawa, Kansas 66067                    |
| <b>John D. Douthit, M.D.</b><br>1133 College Avenue<br>Manhattan, Kansas 66503                                   | <b>Edgar C. Ransdell, M.D.</b><br>Medical Plaza Building<br>Topeka, Kansas 66604            |
| <b>Duane E. Frederickson, M.D.</b><br>121 West Lincoln<br>Lindsborg, Kansas 67456                                | <b>Jay L. Richardson, M.D.</b><br>A.C. Office Building<br>Arkansas City, Kansas<br>67005    |
| <b>William Godfrey, M.D.</b><br>6701 W. 76th<br>Prairie Village, Kansas<br>66204                                 | <b>Carlos M. Ruiz, M.D.</b><br>1115 Kansas Street<br>Larned, Kansas 67550                   |
| <b>Robert Gollier, II, M.D.</b><br>1302 S. Main<br>Ottawa, Kansas 66067  | <b>Khalid S. Saffo, M.D.</b><br>4948 Skyline Drive<br>Shawnee Mission, Kansas<br>66205      |
| <b>Modesto S. Gomez, M.D.</b><br>4117 Adams<br>Kansas City, Kansas 66103   | <b>Billy P. Sammons, M.D.</b><br>2020 Central<br>Dodge City, Kansas 67801                   |
| <b>Mario L. Gumucio, M.D.</b><br>755 New Brotherhood<br>Building<br>Kansas City, Kansas 66101                    | <b>Edward H. Saylor, M.D.</b><br>918 W. 10th Street<br>Topeka, Kansas 66604                 |
| <b>Charles D. Herzon, M.D.</b><br>6100 Martway<br>Shawnee Mission, Kansas<br>66202                               | <b>Grant Stone, M.D.</b><br>215 West D Street<br>Attica, Kansas 67009                       |
| <b>Herbert C. Hodes, M.D.</b><br>7349 Canterbury<br>Prairie Village, Kansas<br>66208                             | <b>David W. Stubbs, M.D.</b><br>918 W. 10th Street<br>Topeka, Kansas 66604                  |
| <b>James F. Holleman, Jr. D.O.</b><br>667 S. 55th Street<br>Kansas City, Kansas 66106                            | <b>George Wadsworth, M.D.</b><br>Norton State Hospital<br>Norton, Kansas 67654              |
| <b>Barth Hoogstraten, M.D.</b><br>K.U. Medical Center<br>Kansas City, Kansas 66103                               | <b>Wayne O. Wallace, Jr., M.D.</b><br>1301 N. 3rd Street<br>Atchison, Kansas 66002          |
| <b>Joseph W. Hume, M.D.</b><br>2805 W. 75th Place<br>Prairie Village, Kansas<br>66208                            | <b>Howard N. Ward, M.D.</b><br>204 Medical Arts Building,<br>West<br>Topeka, Kansas 66604   |
| <b>Joseph W. Huston, M.D.</b><br>918 W. 10th Street<br>Topeka, Kansas 66604                                      | <b>Ren Whitaker, M.D.</b><br>Oberlin Clinic<br>Oberlin, Kansas 67749                        |
| <b>Samuel S. Kaplan, M.D.</b><br>12730 W. 100th Street<br>Lenexa, Kansas 66215                                   | <b>Homer J. Williams, M.D.</b><br>524 Market Street<br>Osage City, Kansas 66523             |

*Medical Student Society, University of Kansas Medical Center:*

James Lloyd  
Barry Wood

Tim Weber  
Robert K. York

Darrell E. Zeller

# Medical-Legal Page

## **Informed Consent—Full Disclosure Not Required if Not in Patient's Best Interest**

Two physicians who did not inform a patient of the possible side effects of the contrast medium to be used in thoracic aortography were not liable when the procedure resulted in paralysis, the Hawaii Supreme Court ruled.

The patient, who had a history of hypertension and chronic kidney ailments, was referred to a cardiovascular specialist because of severe and recurring attacks of chest pain. The specialist had him admitted to the hospital for observation and x-ray examination. A narcotic (Demerol) was given for the persistent pain.

When x-ray studies indicated the possibility of an aneurysm, the specialist suggested the possibility of heart surgery. In order to make a definite diagnosis, the cardiovascular specialist consulted a thoracic surgeon with regard to thoracic aortography.

The cardiovascular specialist and the thoracic surgeon both explained the procedure to the patient but said nothing to him about the attendant hazards. Consent was signed by the patient and his wife, and the surgeon performed the aortography. After the procedure, the patient was paralyzed from the waist down and had no bowel or bladder control. The paralysis was a side effect of Urokon, the contrast medium used.

In a malpractice action against the physician and the thoracic surgeon, the patient sought to recover damages for his physical disability and his wife sought damages for loss of consortium. The patient died while the action was pending, and his wife pressed the claim in her capacity as executrix of his estate.

In a claim for assault and battery, it was alleged that failure to disclose the risk invalidated the consent and that performance of the procedure therefore constituted unlawful touching of the patient's body. The court held that, in this instance, the touching was with consent, since it was of the same nature and scope as that to which consent was given, even though it involved an undisclosed collateral hazard. Therefore, the suit was treated as one for negligence, rather than for assault and battery.

The court recognized that no hard and fast rule can be made as to the circumstances that will excuse withholding information or the kind of information to be withheld. In this case, the physician's reasons

for withholding information were that the patient was gravely ill and apprehensive and that frightening a man with a serious heart disease and hypertension would create further problems. The physician said that, since the patient was a dentist, he was aware of the hazards of injections.

The thoracic surgeon said that he thought that full disclosure would not have been in the patient's best medical interest in view of his psychological condition. He also said that Urokon was practically the only satisfactory contrast medium available for the procedure and that he thought that the chance of side effects from its use was relatively minimal.

The physician testified that he disclosed the collateral hazard to the patient's wife. She testified that he did not. The court said that the physicians owed no duty of disclosure to the wife under the law, since the duty of full disclosure arises from the physician-patient relationship. Although it is frequently stated that when information is withheld from a patient for therapeutic reasons full disclosure should be made to his wife, physicians have no legal duty to do so.

In dismissing the action, the trial court held that the evidence brought the omission to disclose clearly within the exception to the duty of full disclosure which excuses withholding of information for therapeutic reasons.

Another ground for dismissal of the action by the trial court was the rule applicable to medical malpractice actions based on alleged negligence in treatment. This rule requires the question of negligence to be decided by reference to relevant medical standards, and it imposes on the patient the burden of proving the applicable standard by expert medical testimony.

In the present case, the only medical witnesses were the physicians themselves, testifying as adverse witnesses. However, their testimony was deemed to be expert medical testimony insofar as they disclosed the practice of competent and responsible medical practitioners in a particular medical situation. The medical standard established was that a competent and responsible physician would not disclose information that might induce an adverse psychosomatic reaction in a highly apprehensive patient.

In a dissenting opinion, a judge said that where the sole claim for relief in the case was alleged battery, the court could not rightfully and justifiably hold that the claim should be decided on technical elements of the negligence theory. Under the battery theory, a physician must prove that withholding the information was justified under reasonable standards of medical practice, and under the negligence theory

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the patient must prove it was negligent under established standard of medical practice for the physician to withhold the information. The claim for relief under the doctrine of informed consent is founded on the theory of battery and based on the concept that consent, unless intelligently given, is not consent and that without informed consent whatever is done by a doctor is battery.

The dissenting judge further stated his belief that a prima facie case of battery and liability on the part of the physicians had been proved and that the burden was not on the patient to show that under reasonable standard of medical practice the doctors should have been required to make full disclosure. The physicians had the burden, the dissenting judge said, to show by expert medical testimony either (1) that the diagnostic procedure would not bring about paralysis as an aftereffect or (2) that such hazard was so minimal that they were under no duty to inform the patient or (3) that by reasonable standards of medical practice it would have been in the best interest of the patient not to inform him of the hazards. Both the cardiovascular specialist and the thoracic surgeon, in taking the stand as adverse witnesses, were giving self-serving testimony to justify their action and nonaction. Testimony of other, disinterested, physicians should be required to establish the reasonable standard of medical practice on these questions, the judge said.—*Nishi v. Hartwell*, 473 P.2d 116 (Haw.Sup.Ct., July 21, 1970)

### **Informed Consent— Not Required in an Emergency**

A jury could properly find that two physicians, who were sued by the administrator of the estate of a patient who had died the day following the performance of a thyroidectomy, had acted in accordance with a valid "informed" consent from the patient, a federal appellate court held. It was also proper, the court said, for the trial court to allow the jury to decide whether or not an emergency existed which would permit the physicians to operate without such consent.

The patient was suffering from an "extremely toxic goiter" and was referred by her family physician to the physicians involved in this case to "have thyroid surgery performed." On December 12, because one of these physicians "felt she was an emergency," he had her admitted immediately to a hospital, telling the patient and her husband that surgery was imperative and that thyroid surgery was "serious." The patient and her husband at that time both signed an authorization for medical and surgical treatment. The patient was given a course of drugs to produce a "euthyroid state" before the operation. Although seriously ill, she was permitted to go home for the

Christmas holidays, staying there until January 16, at which time her condition had deteriorated. She was again admitted to the hospital as an emergency patient. She then signed another authorization. The operating physician repeatedly told the husband that he would operate "as soon as he felt she was in good enough condition to be operated on."

On February 6, the physician operated because "the point was reached where the drugs had begun to lose their effectiveness" and unless surgery was performed at that time she would never be able to withstand an operation. The patient died during the night following surgery.

The administrator of the patient's estate sued the two physicians. Judgment on a jury verdict in favor of the physicians was entered in the trial court, and an appeal ensued.

Before performing surgery, said the federal appellate court, the physician must obtain the consent of the patient unless the need for such consent is obviated by an emergency which places the patient in immediate danger and makes it impractical to secure such consent. Furthermore, in the absence of an emergency, the consent must be "informed" or "knowledgeable." This means that the patient must have a true understanding of the nature of the operation to be performed, the risks inherent in it, the alternative treatments available, and the possible results of such alternatives. Here, the court concluded, there was sufficient evidence from which the jury could have concluded that the patient was aware of the possible adverse results and dangers of the operation and that there was no alternative but surgery if she were to live. There was also sufficient evidence of emergency so that the trial court was not required to rule as a matter of law that no emergency existed, thus dispensing with doubts as to an "informed" consent. In effect, the judgment in favor of the physicians was affirmed.—*Dunham v. Wright*, 423 F.2d 940 (C.A.3, March 19, 1970)

*Editor's Note:* A prior decision was reported in *The Citation*, Vol. 20, No. 8, p. 115.

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## **Borderlands of Epilepsy**

*(Continued from page 153)*

29. Walter, W. G.: Electroencephalography in cases of mental disorder. *J. Ment. Sc.* 88:110-121, 1942.

30. Weil, A. A.: Observations on "dysrhythmic" migraine. *J. Nerv. Ment. Dis.* 134:277-281, 1962.

31. Wolff, H. G.: *Headache and Other Head Pain*. New York, Oxford University Press, 1963.

32. Ziegler, D. K., and Wong, G., Jr.: Migraine in children: Clinical and electroencephalographic study of families. *Epilepsia* 8:171-187, 1967.

33. Zito, M.; Eliseo, M.; Zirilli, G., and Scialfa, G.: Night terrors and nightmares. Nosologic classification and clinical contribution. *Infanz. Anorm.*, 1968, pp. 572-585.

# KMS ANNUAL MEETING FUN NIGHT May 10, 1971

The Singing Doctors: Missouri's Medical Minstrels



*Now surgery's the place for me,  
It offers opportunity  
For men who use their hands and not their heads,  
An extrovert who cuts and sews,  
We talk and egotism flows,  
And what we charge is better left unsaid.*

Such is the self-caricature of Dr. James T. (Jim) Brown, who organized "five more extroverts" into a performing group called "The Singing Doctors," a sextet today competing on phonograph records with Barbra Streisand and the Beatles.

"Actually," says the 46-year-old chief of surgery at St. John's Hospital, Springfield, Missouri, "we're probably more competitive with Soupy Sales, Walter Brennan and Mrs. Miller."

The Springfield physicians' show business "sideline"

came about quite by accident. Dr. Brown, active in his local Greene County Medical Society, was named entertainment chairman for the organization's annual banquet—but he was shocked to discover that the event's budget provided no funds to hire professional talent. "In despair, I wrote some lyrics lampooning the various specialties I knew would be represented in the audience and persuaded five good friends that they had to help me out.

"With trembling knees, we mounted the stage that night, feeling like human sacrifices to the cause of entertaining our colleagues and their wives."

The Singing Doctors were a smash hit in their debut.

"Our only problem was that we didn't have a number to encore with!" Dr. Brown recalls.

They now not only have an encore, but a bundle of numbers!

RAMADA INN, DOWNTOWN—TOPEKA



# KMS ANNUAL MEETING PRESIDENT'S BANQUET MAY 11, 1971



## The Four of Us



Take two beautiful and talented young women . . . then two handsome and talented young men . . . add university degrees in music and speech, self-discipline and an insatiable desire to make it big in show business . . . and you have **THE FOUR OF US!**

Here is that magic mixture which has created one of the most exciting young instrumental-vocal-entertaining self-contained "packages" now appearing at leading hotels and supper clubs across the U. S.

**THE FOUR OF US** are former school teachers Phil and Marcia Zaugg, and Jim and Dee Martin . . . all outstanding solo artists . . . and when they combine their efforts, the results

are a thrilling evening of exciting music and entertainment.

Phil plays bass and his voice is like those big-name baritones appearing on Broadway. Marcia is a speech and theater graduate of Northwestern and has appeared in both straight dramas and musicals.

Jim is truly a pianist-arranger and appeared with the Toledo Symphony Orchestra at eight. Petite Dee has played and sung featured roles in "Camelot," "Gypsy" and "The Gondoliers." She and Jim were both members of the Gilbert and Sullivan Society at the University of Michigan.

Dr. and Mrs. Francis T. Collins extend a personal invitation to members of the Society and their guests to attend the President's Banquet on Tuesday evening, May 11, 1971.

**RAMADA INN, DOWNTOWN—TOPEKA**

# Vox Dox

*To the Editor:*

Please put this in Vox Dox.

I was happy to read the article on Family Medicine in the January issue by Dr. William Stewart on their program in Maryland.

I can't speak for the general practitioners in his area, but his statement that too few of the present general practitioners are qualified to assume the comprehensive and continuing responsibility for family health care would simply not hold true in my area.

The various duties and responsibilities he outlines are daily activities for the general practitioners in our area.

I am not surprised that he has had so few takers on his residency program. Economics are still important and a three-year residency is still a long time to qualify for a program that will still lead to the low end of the totem pole, financially speaking.

Fortunately, I attended the University of Kansas at a time when general practice was not discouraged, as it is now by the medical school faculty. With a little extra guidance from an older doctor, I have found general practice or family practice, however you designate it, very satisfying.

I would like to congratulate Dr. Leland Speer on his comments recently on the K.U. Medical Center. I, too, feel money would be much better spent to establish another medical school in Wichita, geared to produce doctors oriented to treat patients. How much better would it be to train more *doctors* to treat patients instead of training doctors' assistants. Which would you rather have treat you or your family?

Sincerely

GEORGE J. PIERRON, M.D.  
Olathe (Class of '47)

## KMS Education-Information

### *Activity Report—January 15-February 15*

Five news releases were processed and mailed to the state print and electronic media during this 30-day period. Subjects were:

1. The fact that there are some improperly maintained x-ray machines and some inadequately trained operators in the state.

2. The number of inquiries the Society is receiving from out-of-state doctors who are inquiring about practicing in Kansas.

3. The fact that cigarette smoking remains the main cause of lung cancer.

4. Society activities in the drug abuse field with particular emphasis on methadone treatment and support of senate bill 91 dealing with treatment of drug addicts.

5. Release featuring the Kansas Academy of General Practice and a program the academy is doing to increase the number of general practitioners.

The usage factor continues at a high level for releases being processed under this program, and the

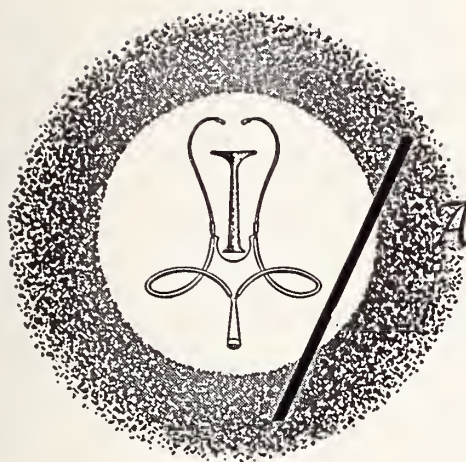
check with the clipping service noted that in many instances the releases are prompting editors to write favorable editorials based on the subjects. During the past 30-day period, for example, the Garden City *Telegram* favorably editorialized on two KMS stories.

The clipping service also noted uncommonly heavy usage of the filler material being provided the state's daily and weekly editors. More than 304 clippings were noted over the last 60 days.

Oliver Ebel also reports that legislators are favorably commenting on the fact that they, too, receive a certain number of KMS releases. This facet of the program brings them closer to Society activity, and certainly they are a key target audience to the program.

Through the Kansas Association of Radio Broadcasters, radio stations are participating most cooperatively in the KMS public service program. It is estimated that some 4,000 spot exposures will be aired for KMS by this organization during the January, February period.





## Announcements

*Professional meetings, conferences, and postgraduate courses of national importance are listed for the DOCTOR'S CALENDAR. Notice of the session is posted in advance to allow the physician time to make preparations.*

### MARCH

- Mar. 25-26 24th national conference on Rural Health, Atlanta Marriott Motor Hotel, Atlanta, Georgia. Sponsored by the Council on Rural Health, American Medical Association.
- Mar. 26-28 American Society of Internal Medicine, Brown Palace, Denver. Write: Mr. W. R. Ramsey, Third at Market, San Francisco 94103.
- Mar. 27-Apr. 1 American College of Allergists, Fairmont and Mark Hopkins Hotels, San Francisco. Write: John R. Ausband, M.D., Bowman Gray School of Medicine, Winston-Salem, North Carolina.
- Mar. 28-Apr. 2 American College of Physicians, Hilton Hotel, Denver. Write: Edward J. Rose-now, Jr., M.D., 4200 Pine Street, Philadelphia 19104.
- Mar. 29-Apr. 3 American College of Radiology, Chase Park Plaza, St. Louis. Write: W. C. Stronach, LL.B., 20 No. Wacker Drive, Chicago 60606.

### APRIL

- Apr. 17 2nd annual Arthur E. Hertzler Memorial Lecture, Halstead, Kansas. Recent Advances in Cardiovascular Diseases. Lecturers: William Likoff, M.D., Philadelphia; Alfred Soffer, M.D., Chicago; Robert P. Hudson, M.D., Kansas City; and Wilford D. Hoofer, M.D., Halstead.
- Apr. 19-21 Annual spring session, American Academy of Pediatrics, Chase-Park Plaza Hotel, St. Louis. For information write American Academy of Pediatrics, 1801 Hinman Ave., Evanston, Illinois 60204.

Apr. 19-22

23rd annual meeting, Southwestern Surgical Congress, Caesar's Palace Hotel, Las Vegas. For information write Jack A. Barney, M.D., Southwestern Surgical Congress, 301 Pasteur Building, Oklahoma City 73103.

Apr. 23-24

28th annual meeting, American Geriatrics Society, Ambassador Hotel, Chicago. Write: Edward Henderson, M.D., Exec. Dir., American Geriatrics Society, 10 Columbus Circle, New York, New York 10019.

Apr. 30-  
Mar. 20

Spring postgraduate medical seminar cruise to the Mediterranean, sponsored by the Department of Postgraduate Medicine, Albany Medical College. For information write William P. Nelson, III, M.D., Department of Postgraduate Medicine, Albany Medical College, Albany, New York 12208.

### MAY

May 3-6

19th annual clinical meeting, American College of Obstetricians and Gynecologists, San Francisco. Postgraduate courses precede the meeting on May 1 and 2. Write: Donald F. Richardson, 79 W. Monroe St., Chicago 60603.

May 9-12

112th annual meeting, Kansas Medical Society, Ramada Inn Downtown, Topeka. Write: Kansas Medical Society, 1300 Topeka Ave., Topeka 66612.

May 17-19

National Conference on Breast Cancer, sponsored by the American Cancer Society, Century Plaza Hotel, Los Angeles. Write: Esther Kelley, Professional Education, ACS, Inc., 219 E. 42nd St., New York, New York 10017.

# Woman's Auxiliary

It's March 30, 7:30 a.m. The sun is shining, the flowers are flowering, or thinking about it . . . and the birds are birding. You stumble from your cozy cot to breakfast, thoughts on rounds, your office and surgery schedules. Then you sneeze. When you open your eyes there's a bright red carnation beside your plate, along with your orange juice.

"What's this for?" you ask your wife, who is hovering in the background to watch your reaction.

"It's yours. You're to wear it to the office today, and we're going out to dinner tonight!" she finishes triumphantly.

Your vision of a peaceful evening at home collapses. "It's not our anniversary, is it? Oh, no. Forgot. That's August. . . . Did the roast burn, or something?" (You could say this, but I doubt if any doctor would be that tactless or careless.)

"Silly," she says affectionately, "It's only 7:30 in the morning. It's Doctors' Day, that's all. It's the day we set aside to celebrate your being a member of the medical profession. Isn't that nice?"

"Hurumph . . ." you answer. Or maybe "Hummm." Either of these suffice for most doctors when presented with an unanswerable question.

At this point you might even ask her who said it was Doctors' Day. We doubt that, too, but we thought you might like to know, so we're going to tell you about it.

Doctors' Day was established in 1935 by the Woman's Auxiliary to the Southern Medical Association. The idea had originated in 1933 as the brainchild of Mrs. C. B. Almond, Winder, Georgia, to honor the day that Dr. Crawford W. Long, a well-known Georgia physician, had first used ether anesthesia in surgery. Its purpose is to honor members of the medical profession, both living and dead, and to promote "the well-being and honor of the profession, its observance demanding some act of kind-

ness, gift or tribute in remembrance of the doctors."

Since that time it has been recognized as being associated with the Southern Medical Association's auxiliary, but it has also been picked up by other auxiliaries as well. The founders suggest that one should try to pay tribute to the doctors on the date chosen, using any public relations media available. Some auxiliaries have asked their clergy to preach Doctors' Day sermons. It has been suggested that all social activities in connection with this event be held on the same day whenever possible, and that it is permissible to dedicate the observance in honor of a beloved and outstanding physician in the community if the auxiliary should choose to do so.

The symbol of Doctors' Day is the red carnation. Suggestions for observance begin with having a red carnation given to doctor-husbands to wear during the day. It isn't unusual for auxiliaries to offer scholarships, for wives to send their doctor-husbands flowers or gifts, and for auxiliaries to have dinners or other social occasions. Other suggestions include placing books in the library, incorporating a history of Doctors' Day into a program, and sending personal greetings to doctor friends or to retired members of the profession.

Exhibits and scrapbooks play a big part of the Southern Medical Association's auxiliary agenda. Four cash prizes, honorable mention certificates and two traveling trophies are the rewards to members of this group.

Whatever you might think about Doctors' Day, and whether or not your local auxiliary celebrates it, we feel that it's a nice way to pay tribute to you. Here's hoping somebody remembers all of you on that day, that you wear a pert red carnation, that your drinks are good and your steak or roast beef just right.

Auxiliary Annie





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VOL. LXXII  
NO. IV

# IF MORE MEN CRIED

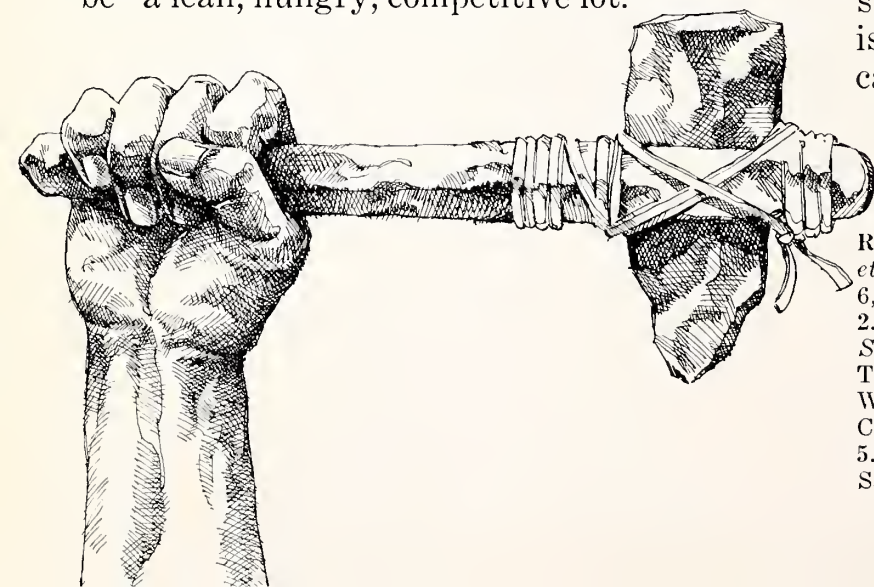


At least seventy-five out of one hundred adults with duodenal ulcers are men.<sup>1</sup>

Why? It may be significant that duodenal ulcer patients tend to crave recognition and are "especially vulnerable to threats to their manly assertive independence."<sup>2</sup>

**Hypersecretion—an atavistic response.** Stewart Wolf, who, with Harold G. Wolff, studied the personalities of duodenal ulcer patients, wonders if masculine competitiveness is related to "an atavistic urge to devour an adversary." It is striking, he reports, that an accentuation of gastric acid secretion and motility can be "induced in ulcer patients by discussions that arouse feelings of inadequacy, frustration and resentment."<sup>2</sup>

**By chance? A lean, hungry lot.** Was the link between emotions and gastric hyperacidity acquired through mutation to serve a purpose? During man's jungle period of evolution, the investigator points out, a male dealt with a foe by killing and devouring it. "It may be more than coincidence," he concludes, that peptic ulcer patients appear to be "a lean, hungry, competitive lot."<sup>3</sup>



**Big boys don't cry.** If more men cried maybe fewer would wind up with duodenal ulcers. But men will be men—the sum total of their genes and what they are taught. Schottstaebgen observes that when a mother admonishes her son who has hurt himself that big boys don't cry, she is teaching him stoicism.<sup>4</sup> Crying is the negation of everything society thinks of as manly. A boy starts defending his manhood at an early age.



## Take away stress you can take away symptoms

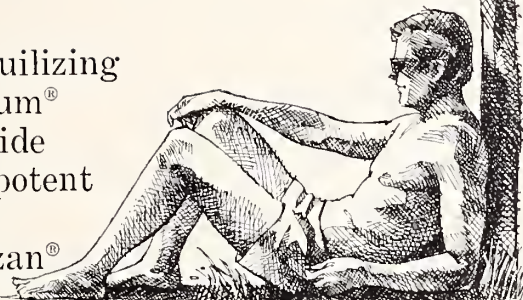
There is no question that stress plays a role in the etiology of duodenal ulcers. Alvarez<sup>5</sup> observes that many a man with an ulcer loses his symptoms the day he shuts out the office and starts out on a vacation. The problem is, the type of man likely to have an ulcer is the type least likely to take long vacations or take it easy at work.

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References: 1. Silen, W.: "Peptic Ulcer," in Wintrobe, M. et al. (eds.): *Harrison's Principles of Internal Medicine*, 6, New York, McGraw-Hill Book Company, 1970, p. 14. 2. Wolf, S., and Goodell, H. (eds.): *Harold G. Wolff: Stress and Disease*, ed. 2, Springfield, Ill., Charles C. Thomas, 1968, pp. 68-69. 3. *Ibid.*, p. 257. 4. Schottstaebgen, W. W.: *Psychophysiologic Approach in Medical Practice*, Chicago, Ill., The Year Book Publishers, Inc., 1960, p. 1. 5. Alvarez, W. C.: *The Neuroses*, Philadelphia, Pa., W. B. Saunders Company, 1951, p. 384.



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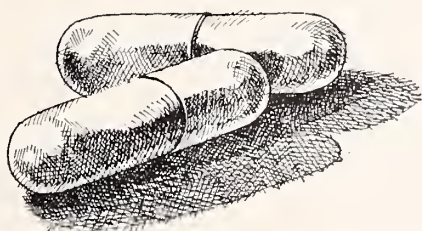


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# The JOURNAL of the KANSAS MEDICAL SOCIETY

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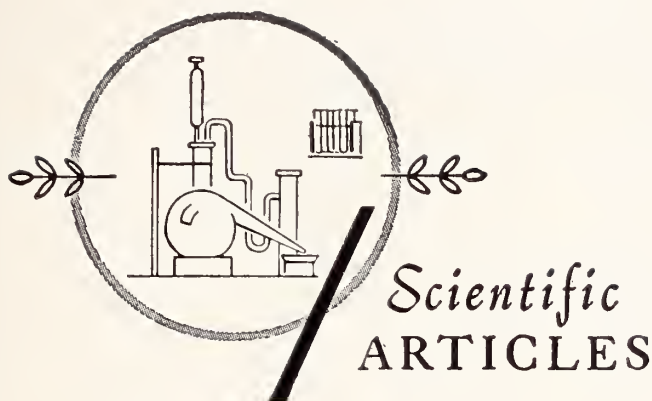
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## Scientific ARTICLES

# Suicide Prevention

### *A Study of the Community Program in Kansas City*

ROBERT E. G. BIDWELL, M.D., JO JEANNE BIDWELL, M.D., and  
S. Y. TSAI, M.D., *Kansas City, Kansas*

SINCE THE PIONEER work of Shneidman, Farberow, and Litman in the Los Angeles County some 12 years ago, 122 community suicide prevention centers had been established throughout the nation by March 1969, including the three in Kansas: Kansas City, Wichita and Garden City.<sup>1, 2</sup> In the face of such expanded efforts, the function and effectiveness of these programs require increasing scrutiny. This report presents our evaluation of a suicide prevention program in Kansas City, during its first three years of operation.

#### Material and Methods

The Wyandotte County Guidance and Mental Health Center, Inc., a community organization founded in 1953, is supported by the United Fund and local levy, and is affiliated with the School of Medicine (Department of Psychiatry) and School of Social Welfare of the University of Kansas. Since September 1966, the Center has provided a 24-hour-a-day suicide prevention service, in the nature of emergency counseling, "emotional first-aid," for Greater Kansas City, which includes most of Wyandotte and Johnson counties of Kansas, and Jackson County, Missouri, and some areas of another three counties. This program is staffed by social workers, clinical psychologists and psychiatrists and is made known

to the local community through the news media, and talks given by the staff at the various church groups, social welfare agencies, service clubs and high school sociology classes. Like other suicide prevention centers, the telephone is used as the means of communication. Persons contemplating suicide or others con-

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**Our findings support the hypothesis that suicidal attempters and suicides constitute two epidemiological populations, albeit overlapping, and that the crisis intervention method of the suicide prevention programs can reach the first group, but not the second.**

---

cerned about them can dial a listed number. An answering service requests the caller's number and name and passes this information on to the staff member on duty, who returns the call. He then administers an initial interview on the telephone and makes referrals to the local mental health clinics, family physicians, psychiatrists, and social welfare agencies as the occasion demands. At times, the local police departments have been called on to assist, such as in escorting a client to a clinic or an agency. The aim is to afford empathic relief of the client's immediate emotional dilemma, to avert the self-destructive trend and to point a constructive way out through the appropriate use of the various community resources. Records are kept of the client's age, sex, so-

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From the Department of Psychiatry, University of Kansas School of Medicine, Kansas City, Kansas. Presented at the Kansas Psychiatric Society Meeting on April 24, 1970.

cial background and mental health history, whenever such information is obtainable. These records of the three-year period from September 1, 1966, to August 31, 1969, formed the basis of this study. Comparisons were made with two other suicidal groups: the persons who have committed the fatal suicidal act, designated here as the completed suicides or suicides, and those who have committed a non-fatal act of self-damage, inflicted with self-destructive intention, however vague or ambiguous it may be, designated here as the suicidal attempters.<sup>3</sup> For the completed suicides, the coroner's records of suicidal and certain accidental deaths such as in single car accidents during the same three year period in Wyandotte, Johnson and Jackson counties were reviewed. The information on the suicidal attempters was much more scarce, as the records belong to the private physicians and hospitals. Consequently, we used the data of a previously studied group of one police district<sup>4</sup> and the 1968 figures on sex and means of attempts from the Police Department of Kansas City, Missouri, it being the most populous municipality in this area. Comparison was also made with published data from the suicide prevention centers of several other cities.<sup>5-9</sup>

## Findings

**VOLUME OF THE CALLS**—The volume numbered a total of 628 calls during the period studied: 286 in the first year, 233 in the second and 122, the third. The decline was attributed to the establishing of another suicide prevention center in the same metropolitan area by the Western Missouri Mental Health Center in 1968 and the lack of further use after the first year of the television medium, which appeared to be more effective in making the community aware of the suicide prevention facilities. Both programs do not yet appear well known enough to the general public and are only listed in the telephone directory without prominent display. We note that the volumes of suicide prevention calls are much bigger in other metropolitan areas: 221 calls in three months in St. Louis, some 1,600 calls per year in Boston, 2,800 calls per year in Chicago and 7,000 calls per year in Los Angeles. The differences are ascribed to the variable of populations available to be served, the publicity and duration of operation of the suicide prevention program, the number of such programs in the same area and the local prevalence of suicidal attempts and suicides. Our largest numbers of calls were received in the months of January, and the least in September and October, but the figures have not been correlated with those of the other program in the area. As in the previous study, no significant seasonal variation was noted among the completed suicides in these three years.

**SOURCES OF THE CALLS**—With the exception of 16, the 628 calls were all from the three counties mentioned above, especially the home county: Wyandotte 43 per cent, Jackson 35 per cent, Johnson 19 per cent, other three counties 2 per cent, and undetermined 1 per cent. The clients themselves placed 58 per cent of the calls. Others who called in behalf of the clients were: female relatives (usually the mother) 9 per cent, friends 9 per cent, spouses 6 per cent, local police departments 6 per cent, local hospitals 3 per cent, ministers 2 per cent, male relatives (never the father) 1 per cent, and unrecorded 6 per cent.

**THE CLIENTS**—274 or 46.5 per cent of the 590 clients had attempted suicides previously or had considered a method of self-destruction by the time the contact was made. Another 45 per cent called the suicide prevention program for help but did not indicate any imminent plan of suicide or did not make an open declaration of suicidal intent. In 7.5 per cent, the extent of their suicide intention could not be determined from the records. One per cent, or six callers, were classified as "pranksters." The above distribution is similar to the data reported by suicidal prevention programs in Chicago, New York, Miami and St. Louis. In all these programs, about half of the calls were directly related to suicide problems (previous suicide attempts and current suicidal intention and plan). The other half of the calls pertained to acute emotional stress, not related to immediate suicidal risk, but to despondency, interpersonal friction, loss of job, loneliness, etc.

Five hundred and forty-three clients gave their own names or were identified by the concerned others calling in their behalf. None of them appeared in the coroner's records as either suicidal or accidental deaths. On the other hand, there were 389 recorded suicides in the three counties in the same three year period; none of these names appeared in the log of our suicide prevention program. The suicides apparently did not call the program. If some of them ever did, they did not identify themselves. There were 47 clients who remained anonymous, including the six "pranksters."

**AGE AND SEX** (*Figure 1* and *Table 4*)—These data were available on 498 clients: 74.6 per cent of them were under 40, and 40.3 per cent were in the decade of 20 to 29 alone. The age distribution of the clients closely resembles that of the previously studied suicidal attempter group. On the contrary, among the 389 suicides, 63.9 per cent were in the age group above 40; only 36.1 per cent were in the range of teen years to 39, with 17.8 per cent in the decade of 20 to 29. In the suicide prevention clients group, there were 156 males and 342 females, a ratio of 1 male to 2.2 females. This is similar to that in the 1968 suicidal attempter group: 1 male to



# COMPARISON OF AGE AND SEX DISTRIBUTION AMONG THREE SUICIDAL GROUPS.

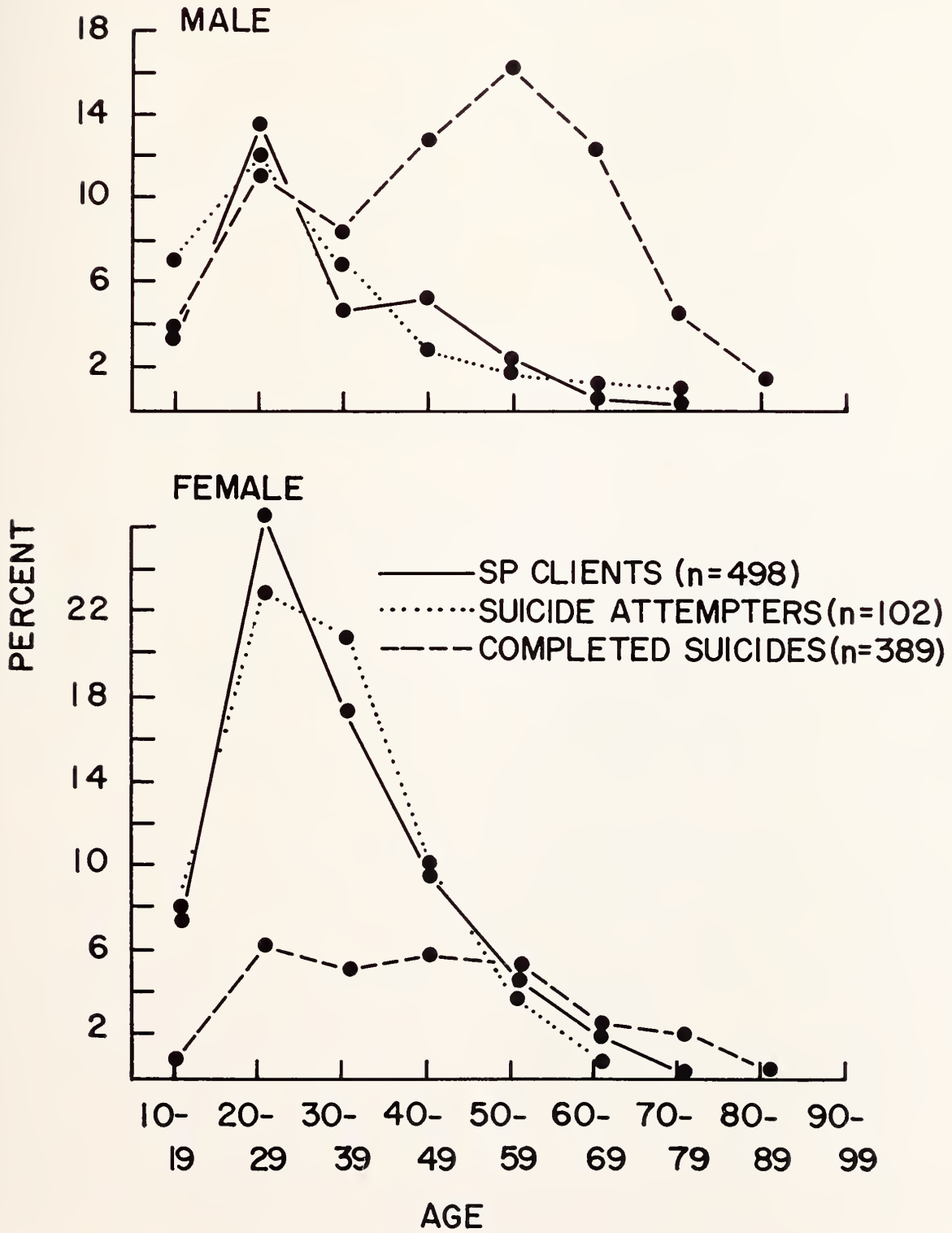


Figure 1

2.4 females. The reverse is true with the suicide group, which included 279 males and 110 females, a ratio of 2.5 males to 1 female. Similar age and sex findings were reported of suicide prevention clients in St. Louis (two thirds under age 40 and 1 male to 4 females), Chicago (59 per cent under 40, 1 male to 3 females), and Los Angeles (median age: 33, and 1 male to 1.8 female).

MARITAL STATUS (*Table 1*)—The marital status was known among 590 of the clients and 369 of the suicides. The divorced, separated and single were over-represented among the clients and the married and widowed were over-represented in the suicide group. Comparable findings were reported from Chicago and St. Louis.

TABLE 1		
MARITAL STATUS		
	SP Clients (n = 540) Per Cent	Suicides (n = 369) Per Cent
Married .....	44.9	63.2
Divorced or separated .....	27.5	13.3
Widowed .....	1.9	9.7
Single (never married) .....	25.7	13.8

OCCUPATION (*Table 2*)—The vocational status was obtained from 307 of the clients and 319 of the suicides. In the client group, students, housewives, clerks, secretaries and the unemployed were over-represented. In the group of completed suicides, skilled and other manual workers, major industrial employees, managers, proprietors and the retired were over-represented. The vocational distribution was related to some extent to the age and sex of the two groups. Among the health professions, the female personnel are more likely to call the suicide prevention center. There were in the client group three licensed practical nurses, seven registered nurses, and one social worker, all female (versus two licensed practical nurses, two registered nurses and one speech pathologist in the suicide group). There is no record that one each of the chiropractor, D.D.S., M.D., pharmacist and social worker, all male, in the group of suicides ever contacted the program.

ETHNICITY (*Table 3*)—The Negro ethnic group constitutes 12.3 per cent of the total of some one million population in the three counties. It appears that both ethnic groups, particularly the young people, have utilized the suicide prevention program about equally well: 89.6 per cent Caucasian clients versus 10.4 per cent Negro clients. The lower inci-

TABLE 2		
VOCATIONAL DISTRIBUTION*		
	SP Clients (n = 307) Per Cent	Suicides (n = 319) Per Cent
Unemployed .....	12.7	1.6
Retired .....	1.0	7.2
Students .....	16.0	5.0
Housewives .....	24.4	10.7
Professional, business adminis- tration, sciences and related occupations .....	8.5	9.1
Managerial occupations and pro- prietors .....	1.0	4.7
Clerical, secretarial and related occupations .....	10.4	6.3
Sales occupations .....	2.6	2.2
Service occupations .....	5.8	8.1
Skilled and other manual occupa- tions .....	11.1	34.4
Some major industries and their occupations .....	0.3	2.5
Government, federal, state and local .....	1.0	1.9
Agricultural occupations .....	0.0	0.9
Transportation, communication and public utilities .....	4.2	3.8
Banking, insurance and real es- tate occupations .....	1.0	1.6

\* Occupational classification based on that of Bureau of Labor Statistics, U. S. Department of Labor (Bulletin No. 1550).

dence of Negro suicides, 6.4 per cent in the studied period, is in accordance with the national trend and our previous finding in this area.

RELIGION—Only 104 of the 509 clients gave information on their religious affiliation: Protestants 53, Catholics 33, Jews 11, and "no religion" 7. The Protestant majority in this area was under-represented. This small sample permits little inference, though it may be of interest to note that several studies in the States have not confirmed the old belief that suicide in this country is more common among Protestants than Catholics.<sup>10</sup> But, then, the official listing of religious affiliation tells little about the extent of devoutness and sense of belonging. While recognizing religious faith as an important issue in the theories of suicide, the staff members of this program, like colleagues elsewhere, have not considered such religious listing of prognostic value in suicide prevention.

WAYS AND MEANS (*Table 4*)—Two hundred and seventy-four of the suicide prevention clients reported the methods of suicide which they had contemplated or they had used previously. Their ways and



TABLE 3  
ETHNIC DISTRIBUTION

	<i>SP Clients</i> ( <i>n</i> = 288) <i>Per Cent</i>	<i>Suicides</i> ( <i>n</i> = 389) <i>Per Cent</i>
Caucasian .....	89.6	93.6
Negro .....	10.4	6.4
Other .....	0	0

means resembled those of the 1968 police series of suicidal attempters. Ingestion of barbiturates, specific poisons, and various drugs and chemicals and cutting with sharp objects were much more frequently used in these two suicidal groups. The pattern of suicidal methods by the attempters has not changed in this area since the last study (1964-1966). In the group of completed suicides, the use of firearms, asphyxia (mostly by carbon monoxide) and hanging were more common, and also more lethal.

**PSYCHIATRIC ILLNESSES**—Half of the 590 clients (50 per cent) had, prior to their contact with the suicide prevention program, professional attention and care at psychiatric hospitals, psychiatric services at general hospitals, community mental health clinics and private psychiatrists' offices. Some were under current treatment at the time of their call. A wide variety of psychiatric conditions was represented. Although the recorded information was not sufficient for final diagnoses, various types of depression and

personality disorders were predominant. Another 90 clients (15 per cent) suffered from alcoholism in its various types. When these patients called or were called about by the concerned others they were always considered a suicidal risk. In St. Louis, 98 per cent of the self-callers were judged to be psychiatrically ill in a follow-up study, with preponderantly primary affective disorder (depression), hysteria (multiple somatic complaints of little organic basis and long duration in females), alcoholism and sociopathy (antisocial personality disorder). In Los Angeles, a follow-up study showed a lesser incidence of schizophrenia, old age infirmities, physical illness and alcoholism among the suicide prevention clients than among the completed suicides.

**"REPEAT CALLERS"**—Twenty-six clients called twice, often on the same day or within a few days. These were not considered as "repeat callers." Five clients made three calls each, six made four calls each and one, five calls, in a span of a week to three months. These "repeat callers" usually represented psychiatrically more ill or "borderline" patients who were nevertheless not overtly psychotic enough to warrant hospitalization, but who were chronically suicidal and reached out to the same and different facilities in the area for frequent reassurance, guidance and dependence. Their pressing demands tended to make the staff feel frustrated in their efforts or even believe that the purpose of the program was being abused. In dealing with these patients, co-operation among the community agencies is necessary, as was done by the two programs in this area and other facilities.

It is thus shown that in the Kansas City area, as in

TABLE 4  
COMPARISON OF WAYS AND MEANS IN SUICIDAL GROUPS  
(All figures given in percentages of *n*)

<i>Ways and Means</i>	<i>SP Clients</i> ( <i>n</i> = 274)		<i>Suicide Attempters</i> ( <i>n</i> = 388)		<i>Suicides</i> ( <i>n</i> = 389)	
	M	F	M	F	M	F
Firearms .....	6.2	4.0	2.1	2.3	46.3	8.0
Asphyxia .....	1.1	2.5	1.8	2.6	10.3	7.5
Ingestion .....	4.8†	44.2†	7.5*	22.4*	2.8†	6.4†
Hanging .....	0.4	0.4	0.4	0.0	4.6	3.0
Jumping .....	4.0	3.6	0.4	1.1	2.1	2.3
Sharps .....	7.3	8.8	7.0	10.1	3.3	0.3
Immolation .....	0.4	0.4	Not reported		1.0	0.8
Accidents .....	2.5	4.4	Not reported		1.3	—
Others .....	—	—	10.1	32.2	—	—
Total .....	31.7	68.3	29.3	70.7	71.7	28.3
M : F .....	1	: 2.2	1	: 2.4	2.5	: 1

† All chemicals and drugs.

\* Only barbiturates and other specific poisons.

the other midwestern metropolis of St. Louis, the clients of the suicide prevention program resemble more closely the suicidal attempters rather than the completed or actual suicides, in reference to age, sex, marital and vocational status, means of self-damage and previous suicidal behavior and psychiatric attention. As a group, the suicidal attempters present statistically more than one hundred times the suicidal risk of the general population.<sup>5,12</sup> Has then this suicide prevention program in its first three years reduced the local suicide incidence by helping the suicide attempters if not the suicides? We are not yet able to measure its effectiveness by the suicide rate, as the variable practice of defining and certifying suicide does not allow an accurate calculation. The utilization of the program, however, indicates that it has at least made an impact in diminishing the taboo of suicide and in meeting a community concern.

## Discussion

Acknowledging the same psychodynamic role of the aggressive-destructive drive in both fatal and nonfatal suicidal acts, Stengel found it justified, on the basis of his observation in England, to treat the groups of suicide attempts and suicides as two different "populations," albeit overlapping, in the epidemiological sense of the term.<sup>3</sup> Similar distinctions between those two groups were noted by Shneidman and Farberow in Los Angeles,<sup>11</sup> Tuckman *et al.* in Philadelphia<sup>12</sup> and Maris in New Haven.<sup>7</sup> In general, the suicidal attempters are characterized by younger age; female sex; single, separated or divorced status; less successful work record or unemployment; better physical health; higher incidence of broken homes through parental divorce; greater emotional dependency; more frequent past and current psychiatric care; and less lethal methods of the suicidal act. The suicides are characterized by older age; male sex; married or widowed status; more successful work records or retirement; poorer physical health; lesser incidence or current psychiatric treatment; lesser social participation and communicativeness and more lethal methods. Hence in an editorial on suicide prevention, Resnik characterized the suicidal act as *Suicidococcus contagiosa*, with two types: type CS (completed suicides) and type SA (suicidal attempts).<sup>13</sup>

From the clinical viewpoint, Stengel found a higher incidence of "unstable personality type" among the suicide attempters versus a higher incidence of psychosis in the suicides. Dorpart and Boswell found in their sample in Seattle that one third of those who completed suicides were psychotic, whereas the most frequent diagnoses in the suicide attempters were personality disorders.<sup>14</sup> Schmidt *et al.* found in St.

Louis that two thirds of the suicides were suffering from affective disorders (depressive illness) or alcoholism and very few from sociopathy or hysteria, but that considerable numbers of sociopaths and hysterics were found among suicide attempters, along with the depressives and alcoholics, who present more serious risk.<sup>15</sup> Those of us who encounter the difficulty of psychiatric nosology in daily practice will incline to state that in suicidal behavior too, we see a continuum of psychopathology. This does not mitigate, however, the fact that the two extremes of the spectrum of mental disorder usually require different methods of treatment and prevention, with the in-between or borderline patients often presenting the most difficult management problem.

The suicide prevention center, in its present mode of operation, reaches the suicidal attempters, and achieves crisis-intervention. These are the ones who cry for help and their social contact seeking tendencies, which serve the preservation of life, are stronger. As Stengel stated, their suicidal behavior carries an "appeal character," *i.e.* appealing for aid, and even an "ordeal character," which is to justify one's existence after subjecting self to the ordeal of a suicidal attempt (such as in Russian roulette).<sup>16</sup> Probably through previous and frequent contact with mental health facilities, they are more knowledgeable about the community resources and are more willing to pick up the telephone to dial for help. In still other instances, the calling of the program serves as a life-saving substitute for the manipulative, attention-seeking but potentially dangerous suicidal attempts, usually referred to as "suicidal gestures" or "acting-out."

In rendering crisis intervention, the label of suicidal intervention may not even be necessary; other agencies and programs with the names of "Call for Help" (Chicago), "Friends" (Miami, Florida), "We Care" (Orlando, Florida) and "Samaritans" (British Commonwealth) serve the same function equally well. As mentioned, people do call the suicide prevention program for other sorts of emotional distress. Indeed, argument has been put forth against the use of the name suicide prevention for mental health programs, as it may interfere with the broader function of crisis intervention in a community.<sup>17</sup>

The suicide prevention program has reached but few of the group of completed suicides. Wold reported in 1968 that less than 5 per cent of the suicides in the Los Angeles County (which has about 1,200 suicidal deaths per year) had previously contacted the L. A. Suicide Prevention Center.<sup>18</sup> Weiner reported in 1969 that 98 per cent of the completed suicides in the Los Angeles County did not contact the suicide prevention center. Comparing the numbers of suicides per year before and after the L. A.



Suicide Prevention Center was established in 1958 and with the numbers of suicides in three other California counties, he further noted that the suicide rate had not decreased in spite of overall increase in number of calls to the program.<sup>19</sup> In contrast to the suicidal attempters, the suicides are low in social participation and have little social contact (except probably through television). Telephoning is not their medium and message to convey their suicidal intent. Maris and others have suggested that, before the crisis of suicidal act emerges, they need be aggressively sought out. In other words, the method of case finding in preventive medicine should be applicable here. Motto has addressed himself to the physician's responsibility in case finding.<sup>18</sup> Inasmuch as 70 per cent of suicides have been seen by a physician within three months of their deaths,<sup>8</sup> it behooves the physician to recognize the suicidal patients and the various types of depression often hidden behind their somatic complaints. In our own study we have noted in several instances where the patient committed suicide after adequate surgical, medical and psychiatric procedures. The treatments were successful; the patients nevertheless died by killing themselves. The recent report by Resnik on the suicidal behavior of a pediatric surgical patient is another such illustration.<sup>20</sup>

The epidemiological and clinical conceptualizations of suicidal behavior are pragmatic and convenient for the present, but simplistic. Suicide has been called "the end result of a wide spectrum of psychic dramas,"<sup>21</sup> and "an event, a culmination of many different processes."<sup>22</sup> "Suicide occurs within a matrix of sociological-psychological phenomena of great complexity."<sup>23</sup> To better understand suicide and to expand the preventive measures, the collection of more data is sorely needed. To this end, it is time to have standardized certification of suicidal deaths, reporting of suicidal attempts and recording of suicide prevention calls, as well as the coordination of the different community programs, in essence, some system similar to the tumor registry or a central data bank.<sup>24</sup> We concur in this suggestion.

## Summary

During the first three years of a community suicide prevention program in the Kansas City area, emergency counseling service by telephone was rendered to 590 clients, who resembled the suicidal attempters in being predominantly young, female, single, separated or divorced, having had previous suicidal attempts and psychiatric attention, and tending to use chemicals and drugs and sharp cutting objects in their suicidal behavior. That they themselves placed 58 per cent of the calls and that their relatives, friends, local police departments, hospitals, minis-

ters and others made 42 per cent of the calls in their behalf indicated their stronger social contact seeking tendency. None of the 543 identified clients appeared in the coroners' records of the Wyandotte and Johnson counties, Kansas, and Jackson County, Missouri, as either suicidal or accidental deaths. On the other hand, there were 389 recorded suicides in the three counties during the same period. None of these names appeared in the log of the program. Demographically, these completed suicides were the opposite of the clients in being predominantly male, older, married or widowed, and gainfully employed or retired. They were much less communicative about their suicidal intent, and used the more lethal means of firearms, asphyxia and hanging. Our findings support the hypothesis that suicidal attempters and suicides constitute two epidemiological populations, albeit overlapping, and that the crisis intervention method of the suicide prevention programs can reach the first group, but not the second.

## ACKNOWLEDGEMENT

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## References

1. Litman, R. E., Farberow, N. L., Shneidman, E. S., et al.: Suicide—prevention telephone service. *JAMA* 192:21-26, 1965.
2. Directory of Suicide Prevention Facilities. *Bull. Suicidology* 5:47-58, 1969.
3. Stengel, E.: Attempted suicides, in Resnik, H. L. P. (ed.): *Suicidal Behaviors*. Boston: Little, Brown & Co., 1968.
4. Bidwell, R. E. G., Bidwell, J. J., and Tsai, S. Y.: Suicide in the Kansas City area—a pilot study. *J. Kans. Med. Soc.* 59:106-113, 1968.
5. Murphy, G. E., Wetzel, R. D., Swallow, C. S., and McClure, T. N.: Who calls the suicide prevention center: a study of 55 persons calling on their own behalf. *Amer. J. Psychiat.* 126:314-324, 1969.
6. Wilkins, J.: Suicide prevention centers: comparison of clients in several cities. *Compr. Psychiat.* 10:443-451, 1969.
7. Maris, R. W.: The sociology of suicide prevention: policy implications of differences between suicidal patients and completed suicides. *Social Problems* 17:132-149, 1969.
8. Litman, R. E.: Suicide prevention center patients: a follow-up study. *Bull. Suicidology* 6:12-17, Spring 1970.
9. Wold, C. I.: Characteristics of 26,000 suicide prevention patients. *Bull. Suicidology* 6:24-28, Spring 1970.
10. Pokorny, A. D.: Myths about suicide, in Resnik, H. L. P. (ed.): *Suicidal Behaviors*. Boston: Little, Brown & Co., 1968.
11. Shneidman, E. S., and Farberow, N. L.: Statistical comparisons between attempted and committed suicides, in Farberow, N. L., Shneidman, E. S. (eds.): *The Cry for Help*. New York: McGraw-Hill, 1961.

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# Pulmonary Edema

## —Diagnosis and Treatment

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### Definition

PULMONARY EDEMA is the abnormal accumulation of fluid in the intercellular spaces of the lung. It is usually considered to be a transudate if the specific gravity is below 1.012 or an exudate (inflammatory) if the specific gravity is over 1.018. It is most often due to the inability of the left ventricle to pump blood out of the thorax as rapidly as it arrives. Fluid leaks out of the capillaries and then into the alveoli and bronchi.

Four separate spaces are involved in the picture of pulmonary edema:

1. The interstitial connective tissue space around the blood vessels and airways.
2. The alveolar wall space which includes the intercellular and intracellular space outside the lumen of the capillaries.
3. The alveolar space.
4. The airway space including the alveolar ducts, respiratory bronchioles, terminal bronchioles, etc. up to the trachea.

Clinically, the degree of difficulty depends upon the amount of fluid in these spaces and how rapidly the edema develops.

Pulmonary edema results from an imbalance between the forces tending to retain fluid in the intravascular compartment and those tending to move fluid into the interstitial spaces. The two basically different hemodynamic states during which pulmonary edema may occur are (1) increased systemic arterial pressure and cardiac output, and (2) low or normal arterial pressure and decreased cardiac output.

Several factors must be considered as promoting pulmonary edema. Often one factor may predominate, but almost never is the sole cause of pulmonary edema. These factors are:

1. Elevation of pulmonary capillary blood pressure (almost always present).
2. Increase in blood volume.
3. Increase in filtration area.
4. Increase in pulmonary capillary permeability to colloid.

5. Depression of plasma colloid osmotic pressure.
6. Elevation of lymphatic vessel pressure.
7. Elevation of colloid content of alveolar or interstitial fluid.
8. Change in interstitial fluid pressure. Depression will promote filtration from the capillaries.

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**The diagnosis and treatment of acute pulmonary edema requires rapid evaluation of the clinical and laboratory findings. The treatment of the acute form may be summarized by the words MOST DAMP. The diagnosis and treatment of chronic pulmonary edema often require more prolonged and extensive procedures as well as a careful follow-up by a concerned physician.**

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Elevation will promote movement into the alveolar spaces or into the blood and lymphatics.

Pulmonary edema in man is usually a complication of other diseases, with the possible exception of poisoning by the lung irritant gases.

1. Clinically, pulmonary edema is most frequently seen as a complication of diseases of the cardiovascular system with:

a. Left ventricular failure which accompanies ischemic heart disease, aortic stenosis even in younger patients with a normal cardiac output, as well as rheumatic fever in the acute phase or later with mitral insufficiency or stenosis, and aortic insufficiency or stenosis.

b. It is seen in the hypertensive heart disease category from essential hypertension, acute glomerulonephritis, hypertensive nephropathies, toxemia of pregnancy, as well as the rare finding of pheochromocytoma.

c. It is also found in acute or chronic pulmonary heart disease.

d. It is still occasionally found in luetic heart disease with aortic insufficiency, aortitis and aortic aneurysm.

e. It is also found in the fat embolism syndrome with cardiac arrhythmias.

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f. It often accompanies shock with or without the above cardiovascular diseases.

2. The next most common group of diseases would be those associated with the respiratory system such as:

- a. pneumonia,
- b. wet or dry drowning,
- c. strangulation,
- d. asphyxia,
- e. fat embolism,
- f. respiratory obstruction (such as found in edema of the glottis, bronchial asthma or foreign bodies),
- g. carcinoma of the lung or bronchi (either primary or metastatic),
- h. respiratory burns, and
- i. inhalation of numerous irritant or toxic gases (100 per cent oxygen can be an irritant);
- j. other contributing respiratory causes would include lobectomy, trauma to the chest (producing the so-called wet-lung), and rapid thoracentesis. Removal of pleural fluid or air may produce unilateral pulmonary edema.

3. The third group would be diseases or lesions of the central nervous system such as:

- a. trauma to the skull,
- b. subarachnoid hemorrhage,
- c. cerebrovascular attack (due to hemorrhage, thrombosis, embolism, abscess or tumor), and
- d. infections such as encephalitis, meningitis, poliomyelitis, tetanus, etc. The mechanism for this type of edema has been described by Sarnoff as due to:

- 1a. sympathetic stimulation,
- 2b. peripheral vasoconstriction,
- 3c. massive displacement of blood from the periphery to the heart and pulmonary bed and finally
- 4d. relative heart failure.

4. The fourth group is the allergy group and includes angioneurotic edema, serum sickness, injection of gold preparations, and inhalation of antibiotics (such as penicillin, etc.).

5. It is seen at times in surgical patients, especially following blood transfusions (even with packed red cells), infusions (especially in cardiac or anemic patients), or following manipulation of the stellate ganglion. It may occur during pregnancy or after labor, especially in patients with rheumatic heart disease, eclampsia or toxemia.

6. It occurs sometimes following stimulation of hollow viscera such as distention of the esophagus, stomach or gallbladder, or following too rapid emptying of a distended urinary bladder or ascites.

7. It is seen in toxic states following the use or

overdose of the thiourea derivatives, iodides, muscarine, eserine, prostigmine, narcotics (opium, heroin, morphine), methyl salicylate, acetic and butyric ether, phenylcarbomide, ANTU, organo-phosphorus insecticides, nitrous gases, phosgene, ethylene oxide, lithium, etc.

8. Other clinical conditions which produce pulmonary edema are: burns, insulin shock, multiple fractures (often associated with the fat embolism syndrome), beriberi heart disease, and thyroid crises "High altitude pulmonary edema" has been recognized and described.

9. Pulmonary edema has been produced experimentally by a variety of methods, including:

- a. Ligation of the aortic arch in the rabbit.
- b. Reduction of the left ventricular chamber or necrosis of the left ventricular wall causing acute left ventricular damage.
- c. Injection of epinephrine.
- d. Unilateral chest injury.
- e. Creation of limited pulmonary embolism causing bilateral pulmonary edema.
- f. Massive intravenous infusions of saline, or intracarotid infusions of saline.
- g. Inhalation of toxic gases.
- h. Intrabronchial injection of hypertonic solution.
- i. Injection of methyl salicylate, muscarine, alloxan, alphanaphthylthiourea or ingestion of thiourea derivatives or ammonium chloride.
- j. Production of combination of stress applied to the left ventricle (aortic insufficiency) plus intravenous injection of epinephrine, or stimulation of the central nervous system. It has been produced by unilateral nephrectomy as well as by contralateral nephrectomy with contralateral narrowing of the renal artery.

k. Production of cerebral damage by trauma to the brain, or occlusion of the carotid bodies, destruction of the hypothalamus or intracisternal injection of either veratrim or fibrinogen plus thrombin.

l. Creation of pulmonary embolization.

Quick and accurate diagnosis of the cause is essential for the appropriate treatment of acute pulmonary edema.

1. The clinical diagnosis of acute pulmonary edema is usually quite easy. The patient has severe dyspnea, orthopnea, usually a rapid respiratory rate; cyanosis is often present, as well as copious, frothy, often bloody sputum. The patient has to sit up to get his breath, the heart is usually enlarged and arrhythmia or gallop rhythm is often found. Bubbling, wheezing rales are typical of this condition. If right ventricular failure develops the neck veins are distended, the liver is enlarged, often tender, and jaundice may be present; ankle edema or ascites may be

present. The blood pressure is usually elevated, the patient is fearful, and death appears imminent.

2. The laboratory tests should be done as soon as possible and should include determination of blood gases, blood sugar, BUN, CBC, LDH, SGOT, sodium, potassium, chlorides, pH, as well as EKG and urinalysis; a blood frozen section examination for fat should be done if fat embolism is suspected. The arterial oxygen is usually low, the  $\text{CO}_2$  may be low, normal, or high, the circulation time is prolonged. The EKG is usually helpful to diagnose arrhythmias but cannot be used to diagnose heart failure or even early infarction during the first few hours. The pulmonary wedge pressure is usually elevated above 12 millimeters. The transthoracic electrical impedance has been studied to diagnose early pulmonary edema; however, changes in the tidal volume and movements of the chest wall produce interference to a prohibitive degree in using such a system with spot skin electrodes. The Minnesota Impedance cardiograph apparently has less interference from changes in tidal volume and chest wall movement, and is more successful.

3. The chest x-ray film shows vascular congestion in the early stages of pulmonary edema; followed by interstitial edema, and finally the alveolar edema with the typical butterfly or batwing appearance. Septal edema is manifested by one or all of the so-called Kerley lines. Kerley A lines are thin, non-branching lines which extend out from the hilar areas and represent edema in the contiguous interlobular septa. Kerley B lines are straight lines about two centimeters long which are perpendicular to the pleural surface and are generally best seen in the lower lung fields in the oblique projection. These represent thickening of the peripheral interlobular septa. Kerley C lines are extremely fine interlacing lines which produce a reticular appearance throughout the lung. The appearance of Kerley B lines on the x-ray film are extremely helpful in the diagnosis of pulmonary edema, especially in mitral stenosis. Examination of the cardiac size and shape are very helpful. Cardiac enlargement is probably the most consistent finding in pulmonary edema due to congestive heart failure. The size of the cardiac shadow may be misleading if the patient has severe chronic pulmonary disease such as emphysema.

It should be noted while discussing diagnosis that the triad of (1) pin-point pupils, (2) pulmonary edema without congestive heart failure and (3) poor or slow respiratory rate should alert the physician to the diagnosis of heroin overdose (especially if there are needle point marks on the arms or legs).

The treatment of acute pulmonary edema may be remembered by the words MOST DAMP, since the lungs are most damp.

M. Morphine,  $\frac{1}{8}$  to  $\frac{1}{4}$  grain, relieves pain and apprehension, improves peripheral circulation, probably decreases blood return to the right heart; (demerol or atropine also). In a patient with narcotic overdose such as heroin, 10 milligrams of nalline should be given every half hour for three doses.

O. Oxygen is the most important part of the treatment; usually starting with 100 per cent oxygen at first, then reducing it after the blood gases return to normal.

S. Sitting position of patient—most comfortable for the patient.

T. Tourniquet—rotating tourniquets or venesection have been very helpful.

D. Digitalis; intravenous dose is preferred if severe pulmonary edema is due to congestive heart failure (lanoxin 0.5 milligram every 4 to 6 hours for three doses, or up to 1.2 milligram of digitoxin; some prefer Lantoside C); beware of digitalis overdose if patient has been on a digitalis preparation before edema develops, especially if rapid diuresis occurs. EKG and monitor are very useful. Pronestyl or Xylocaine are often necessary for arrhythmias.

A. Alcohol or Aminophyllin—five cubic centimeters of 30 to 50 per cent ethyl alcohol by I.P.P.B. for ten minutes every hour is often lifesaving. Aminophyllin is also very useful  $3\frac{3}{4}$  to  $7\frac{1}{2}$  grains given slowly intravenously.

M. Mercurial or other diuretic—Lasix 20 to 40 milligrams given intravenously will produce diuresis in 5 to 10 minutes and will last up to 2 hours in most patients. Twenty to 40 milligrams Lasix intravenously may be repeated in 2 or 3 hours if necessary. There are many other diuretics available. Fifty to 100 milligrams Edicrin is also useful. Frequency of dosage will vary with the amount of diuresis and varies with each patient.

P. Positive pressure—Almost always necessary in severe cases; sometimes intermittent and sometimes continuous; tracheotomy is sometimes necessary and positive pressure is very useful in those patients also.

If the pulmonary edema is due to angina, sometimes placing a nitroglycerine tablet under the tongue will give rapid relief of symptoms. Massaging the carotid artery has been described as giving marked improvement in some patients.

Acute pulmonary edema is certainly one of the most life-threatening conditions seen in the emergency room and in the intensive care units.

The diagnosis and treatment of chronic pulmonary edema depend upon the cause of the edema. A careful history and physical examination as well as chest x-ray, blood examinations, EKG, EEG, pulmonary function studies and other examinations are often necessary for a correct diagnosis. The treatment has to include treating the cause and removing it,



if possible. The cardiac patient requires careful control of digitalis, diuretic, diet and electrolytes. The patient with chronic pulmonary disease also requires conscientious control, especially if he develops congestive heart failure. The differential diagnosis of chronic pulmonary edema includes as many diseases as the acute form; however, the cardiovascular and respiratory groups are the most frequent.

## References

1. Luisada, Aldo A.: Mechanism of neurogenic pulmonary edema. *Amer. J. Cardio.* 20:66-68, July 1967.
2. Harle, T. S., Kountoupis, J. T., Boone, M. L. M., and Fred, H. L.: Pulmonary edema without cardiomegaly. *Amer. J. Roentgen.* 103:555-560, July 1968.
3. Gross, P., Rinehart, W. E., Smyth, H. F. Jr., and Burton, K. J.: Morphologic criteria of pulmonary edema. *Arch. Environ. Health* 19:663-665, Nov. 1969.
4. Selzman, J. M., Kahil, M. E., and Fred, H. L.: Pulmonary edema accompanying heroin intoxication. *Cardiovascular Research Center Bulletin* 6(2):77-79, Oct.-Dec. 1967.
5. Steinberg, A. D., and Karliner, J. S.: The clinical spectrum of heroin pulmonary edema. *Arch. Intern. Med.* 122:122-127, Aug. 1968.
6. Vasko, J. S., Jenney, R. P., Oldham, H. N., Brawley, R. K., and Morrow, A. G.: Mechanisms of action of morphine in the treatment of experimental pulmonary edema. *Amer. J. Cardio.* 18:876-883, Dec. 1966.
7. Singh, Inder: High-altitude pulmonary edema. *Amer. Heart Journal* 70:435-439, Oct. 1965.
8. Viswanathan, R., Jain, S. K., Subramanian, S., Subramanian, T. A. V., Dua, G. L., and Giri, J.: Pulmonary edema of high altitude. *Amer. Rev. Resp. Dis.* 100:334-341, Sept. 1969.
9. Kover, G., Szocs, Eva, and Zombori, Margaret: Pulmonary oedema. *Acta Medica Academiae Scientiarum Hungaricae* 23:117-124, 1967.
10. Beton, D. C., Andrews, G. S., Davies, H. J., Howells, L., and Smith, G. F.: Acute cadmium fume poisoning. *Brit. J. Indust. Med.* 23:292-301, 1966.
11. Steinberg, Alfred D.: Pulmonary edema following ingestion of hydrochlorothiazide. *JAMA* 204:825-827, May 27, 1968.
12. Stone, H. H., and Martin, J. D.: Pulmonary injury associated with thermal burns. *Surg. Gyn. and Obst.* 129:1242-1246, Dec. 1969.
13. Huff, R. W., and Fred, H. L.: Postictal pulmonary edema. *Arch. Int. Med.* 117:824-828, June 1966.
14. Phillips, Ervin, and Fleischner, Felix G.: Pulmonary edema in the course of a blood transfusion without overloading the circulation. *Dis. Chest* 50:619-623, Dec. 1966.
15. McQueen, E. G., Brosnan, Christine, and Ferry, D. G.: Poisoning from a rose spray containing Lindane and Malathion. *N. Z. Med. J.* 67:533-537, May 1968.
16. Ziskind, Morton M., Weill, Hans, and George, Robert A.: Acute pulmonary edema following the treatment of spontaneous pneumothorax with excessive negative intrapleural pressure. *Amer. Rev. Resp. Dis.* 92:632-636; Oct. 1965.
17. Pomerantz, M., Baumgartner, R., Lauridson, J., and Eiseman, B.: Transthoracic electrical impedance for the early detection of pulmonary edema. *Surgery* 66:260-268, July 1969.
18. Cordasco, E. M., Kostis, H., Vance, J. W., and Golden, L. N.: Pulmonary edema of noncardiac origin. *Arch. Environ. Health* 11:588-596, Oct. 1965.
19. Rigler, Leo G., and Suprenant, Edgar L.: Pulmonary edema. Seminars in *Roentgen.* 2:33-48, Jan. 1967.
20. Burch, George E., and DePasquale, Nicholas P.: Congestive heart failure—acute pulmonary edema. *JAMA* 208:1895-1897, June 9, 1969.

## Suicide Prevention

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12. Tuckman, J., Youngman, W. F., and Bleiberg, B. M.: Attempted suicides by adults. *Public Health Rep.* 77:605-614, 1962.
13. Resnik, H. L. P.: The neglected search for the *Suicidococcus contagiosa*. *Arch. Environ. Health* 19:307-309, 1969.
14. Dorpart, T. L., and Boswell, J. W.: An evaluation of suicidal intent in suicidal attempts. *Compr. Psychiat.* 4:117-125, 1963.
15. Schmidt, E. H., O'Neal, P., and Robins, E.: Evaluation of suicide attempts as guide to therapy: clinical and follow-up study of 109 patients. *JAMA* 155:549-557, 1954.
16. Stengel, E.: Inquiries into attempted suicides. *Proc. Roy. Soc. Med.* 45:613-620, 1952.
17. Hitchcock, J., and Wolford, J. A.: Alternatives to the suicide prevention approach to mental health. *Arch. Gen. Psychiat.* 22:547-549, 1970.
18. Motto, J. A.: Toward suicide prevention in medical practice. *JAMA* 210:1229-1232, 1969.
19. Weiner, I. W.: The effectiveness of a suicide prevention program. *Ment. Hygiene* 53:357-363, 1969.
20. Resnik, H. L. P.: Suicide attempt by a child after amputation. *JAMA* 212:1211-1212, 1970.
21. Dublin, L.: *Suicide: A Sociological and Statistical Study*. New York: Ronald Press, 1963.
22. Litman, R. E.: Emergency response to potential suicide. *J. Mich. Med. Soc.* 62:68-72, 1963.
23. Litman, R. E.: Psychiatric hospitals and suicide prevention centers. *Compr. Psychiat.* 6:119-127, 1965.
24. Kiev, A.: New directions for suicide prevention centers. *Amer. J. Psychiat.* 127:87-88, 1970.

**TUESDAY EVENING, MAY 11**

**PRESIDENT'S BANQUET**

**Annual Meeting**

**Kansas Medical Society**

**May 9-12, 1971**

**Ramada Inn, Downtown Topeka**

# Multiple Sclerosis

## *The Benign Form of Multiple Sclerosis*

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MULTIPLE SCLEROSIS presents a train of symptoms varying greatly in severity, and ranging from the acute, rapidly progressive type with early death, to those in whom the initial episode is followed by exacerbation of symptoms with remission, or by those with slow progression without remission, and by those presenting symptoms only after 10 to 30 years, or by an absence of further symptoms during the patient's lifetime.

Unless the importance of this latter benign form is appreciated by the physician, the prognosis and statistics of this disease complex will not be properly understood.

It is the purpose of this paper to call attention to this so-called benign form of multiple sclerosis, and to cite representative cases which may prove difficult in diagnosis because of their benign manifestations.

The diagnosis of multiple sclerosis rests upon the neurologic history, examination and colloidal gold curve, or more recently, on the electrophoresis and immunoelectrophoresis test on cerebrospinal fluid.

The presence of an increase in gamma globulin in the cerebrospinal fluid detected by electrophoresis and immunoelectrophoresis is diagnostic of multiple sclerosis in about 65 to 70 per cent of cases, where the cerebrospinal fluid serology is negative and the serum gamma globulin is normal. This test was performed on the patients documented in this paper, except for the earlier ones when the test was not yet developed, and we had to rely on the colloidal gold curve.

Poser<sup>1</sup> conducted a survey by 108 neurologists of 25 cases with the diagnostic criteria of multiple sclerosis verified by autopsy. He states that "although there is a remarkably uniform index of accuracy (or error) for any group of cases, close examination reveals wide discrepancies in the evaluation of individual patients. Until a definitive, completely objective diagnostic test for multiple sclerosis becomes available, only the standardization of clinical criteria can be depended upon to improve the accuracy of epidemiologic studies."

An attempt at such standardization has been made in the clinical diagnosis of cases submitted in this paper where no autopsy findings are available.

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The benign form of multiple sclerosis is usually ushered in by retrobulbar neuropathy, affection of the posterior spinal columns or brain stem. It is further characterized by few or no relapses following the initial manifestation of the disease.

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**For full appreciation of the multiple sclerosis syndrome, the recognition of its benign manifestations is most important from the diagnostic and prognostic standpoint.**

**The benign form is characterized by an initial involvement of the optic nerve, posterior columns of the spinal cord or brain stem. Few or no relapses occur after the second or third year, and if relapses do appear they are mild. Then 10 to 15 years or more elapse without symptoms, furnishing a good prognosis for remainder of life, but with the reservation that after such a long interval there is still a chance for severe relapse in an exceptional case.**

**Certain characteristic cases have been presented to call attention to this benign type of the multiple sclerosis syndrome in order that greater recognition may be given to it.**

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Just as this disease may be arrested early, it must also be recognized that there are patients who never show clinically recognizable signs, and in whom the disease is diagnosed only at necropsy.

In such cases it may be assumed that the plaques were laid down in clinically silent areas of the central nervous system producing no symptoms or demonstrable signs until discovered at necropsy. McKay<sup>2</sup> reports two cases of pathologically proven multiple sclerosis without preceding clinical evidence of the disease. To further emphasize the frequency of these "silent cases," this author, in a study of 2,900 relatives of patients with multiple sclerosis, found 21 definite, and seven possible cases of that disease.

McAlpine<sup>3</sup> found that 38 per cent of patients in whom the disease had been present for 5 to 10 years,



and 23 per cent in whom the disease was present for 10 to 15 years, were unrestricted in their daily life. According to this author, approximately one patient in every 20 is free from new symptoms for 15 years or more following the onset.

The appearance of retrobulbar neuropathy in patients between ages of 20 and 40 years is followed by other signs of multiple sclerosis within 15 years in half of the cases. In the remaining half, the disease is arrested.

It is an important fact that the initial latent phase tends to be especially long after onset of retrobulbar neuropathy. This is illustrated by the following two cases:

**CASE 1**—A 63-year-old woman developed as an initial episode, 17 years previously, right-sided retrobulbar neuropathy with blindness. She recovered completely in nine months.

She was free of symptoms for 16 years when she developed weakness and numbness of right lower extremity which has persisted along with urinary frequency and urgency. Within the last month she has noticed beginning weakness of the left lower extremity.

*Neurologic Examination:* Neurologic examination revealed marked weakness of right hand grip with increased stretch reflexes in the right upper extremity and positive Hoffmann sign. There was marked weakness with spasticity in right lower extremity with increased stretch reflexes and positive Babinski, Chaddock and Oppenheim signs. On walking, there was dragging of the right lower extremity. There was urinary urgency and frequency. The optic nerves were normal.

The cerebrospinal fluid showed total protein of 23 milligrams per cent, three lymphocytes and colloidal gold curve of 3332100000.

*Course:* In spite of the recent relapse after 16 years she is still able to do her housework and gardening.

**CASE 2**—A 49-year-old female developed, at the age of 31, blurred vision in both eyes, which disappeared within six weeks. One year later blurred vision returned in both eyes for six weeks, associated with diplopia and numbness of right face and arm which cleared within a few weeks.

Since this last episode, 16 years ago, she has had no neurologic symptoms except for the slowly progressive decrease in visual acuity bilaterally.

*Neurologic Examination:* Neurologic examination revealed bilateral temporal pallor of the optic nerves. On several occasions she has shown nystagmus on spontaneous gaze to the left and mild degree of dyssynergia in left arm.

Cerebrospinal fluid showed total protein of 35 milligrams per cent, five lymphocytes, and the colloidal gold curve was 0122211000.

*Course:* She has been followed in the Multiple Sclerosis Clinic since 1958 without signs of relapse. She performs household duties and lives a normal life except for decreased visual acuity.

If the initial lesion of multiple sclerosis is small and does not spread, sensory symptoms may remain localized to a small area as one finger, hand, toe or foot. This is illustrated by the following:

**CASE 3**—Female, 52, who at 30 years of age, developed weakness and numbness in both feet, progressing rapidly to upper thigh level and disappearing within two months. Six months later numbness appeared in both hands, disappearing from the left hand in a few weeks, but persisting in the right hand up to the present time.

*Neurologic Examination:* At 30 years of age she showed hypalgesia of right hand and over the left foot and leg with motor weakness in left leg. Stretch reflexes were increased in left lower extremity with positive Babinski and Chaddock signs. These signs disappeared after eight months, except for hypalgesia of right hand which has persisted up to the present time.

Cerebrospinal fluid showed five lymphocytes, total protein of 22 milligrams per cent and colloidal gold curve of 1233210000.

*Course:* With exception of constant fatigue and the residual hypalgesia in right hand, there have been no complaints referable to the central nervous system for the past 22 years. She has been able to perform household duties since 1947, and is in apparent good health.

Two interesting cases of the benign form of multiple sclerosis occurring in brother and sister follow:

**CASE 4**—Male, 39 years, was admitted to the Multiple Sclerosis Clinic at Wesley Medical Center on July 31, 1968, with complaint of general fatigue, weakness of right lower extremity and unsteadiness on walking.

In 1954, at age of 25 years, he noticed general fatigue and two years later he developed sudden numbness of left side of body, left peripheral facial nerve paralysis, duration two weeks. One month later his hands became numb for two weeks. In 1962, bilateral blurred vision was present for two months. He had no other symptoms until 1968, when he developed weakness of right lower extremity which has persisted to present time.

*Neurologic Examination:* There was moderate weakness of right lower extremity with moderately increased patellar reflex, but no pathologic reflexes. There was past-pointing on F-N test on the right and dysmetria on F-F test. Romberg test was positive.

Cerebrospinal fluid showed eight lymphocytes, total protein of 48 milligrams per cent, and the elec-

trophoresis and immunoelectrophoresis showed immunoglobulin pattern, compatible with multiple sclerosis.

*Course:* He is working regularly in a supervisory capacity and attends the clinic weekly.

CASE 5—Female, 47 years, who 12 years previously developed blurred vision in both eyes associated with diplopia for three weeks. One year later she had mild subjective vertigo with staggering to either side for one month, and occasional frequency and urgency of urination which has persisted intermittently. She stated that each episode was preceded by prolonged exposure to sunlight.

*Neurologic Examination:* On admission to the clinic in 1960, she showed horizontal nystagmus on voluntary gaze to either side, bilateral optic nerve atrophy, temporal side, and positive Romberg. Examination three months later showed absence of Romberg sign and staggering.

Cerebrospinal fluid in 1960, showed four lymphocytes, total protein of 37 milligrams per cent and colloidal gold curve of 0123330000.

*Course:* She has been able to perform household duties, and has remained symptom-free for the past nine years.

*Comment:* It is unusual to find multiple sclerosis occurring in brother and sister and especially since they are each showing the benign form.

CASE 6—Male, 35 years, who, at age of 20 years developed numbness and tingling of left foot with gradual progression to involve the left side of the body excluding hand and face. One week later the right side of the body was similarly affected including the right hand, but not the face. There was an associated difficulty in starting urinary stream. These symptoms disappeared entirely in one month.

In 1959, at age of 24 years numbness reappeared in the left foot and ascended to involve the left side of body and hand, and a few days later extended to

right side of body at same level. There was no motor weakness, but he stated that he had to think before taking a step. These symptoms disappeared after three weeks, and he had no symptoms for ten years when, in 1969, the left foot and leg became numb followed by numbness of right hand one week later.

These symptoms disappeared after two weeks, except for slight numbness in right hand.

*Neurologic Examination:* In 1959, he showed slight weakness in left lower extremity with increased patellar reflex on that side. There were no pathologic reflexes. The abdominal skin reflexes were absent bilaterally. There was hypalgesia in left leg and decreased vibration sense in both feet. There was slight pallor of both optic nerves on temporal side, slight dysynergia on F-N test bilaterally and slight swaying in Romberg position.

Cerebrospinal fluid showed six lymphocytes, 46 milligrams per cent, total protein and the immunoglobulin pattern in electrophoresis and immunoelectrophoresis was compatible with multiple sclerosis.

*Course:* This patient has been working regularly since 1959, and has now returned to work following this slight relapse.

## References

1. Poser, Charles M.: *Annals N. Y. Academy of Sciences*. 122:506-519, 1965.
2. McKay, R. P. and Hirano, A.: Forms of benign multiple sclerosis—Report of two "clinically silent" cases discovered at autopsy. *Arch. N. & O.* (Chicago) 17(6):588-600, 1967.
3. McAlpine, D.: The benign form of multiple sclerosis—results of a long term study. *Brit. M. J.* 5416:1029-1032, 1964.
4. von Poeck, K. and Markas, P.: Is there a benign course of multiple sclerosis? *Munchen Med. Wschr.* 106: 2190-2197, Nov. 27, 1964.
5. Boudelle, M.: Les formes benignes de la sclerose en plaques. *Presse Med.* 75(41):2023-2026, 1967.
6. Taub, R. G. and Rucker, C. W.: The relationship of retrobulbar neuritis to multiple sclerosis. *Amer. J. Ophth.* 37:494-497, April 1964.





112th Annual Session

Kansas Medical Society

May 9-12, 1971

Ramada Inn, Downtown—Topeka

*Make Your Reservations Now!*

# Welcome to Topeka

The Physicians of Shawnee County extend a cordial invitation to our colleagues, wives and guests to attend our annual meeting. We are especially proud of the fine facilities here to make your visit more pleasant. Whether your favorite diversion be sports, night clubs, or both, ample opportunities await you.

We hope that many of you will join your official delegation and come to Topeka to be heard on the issues facing us. The decisions to be made are only strong and vital if they represent the will of the majority. Your delegates need your help and counsel in deciding how to vote. The Reference Committees offer an opportunity for all to express themselves.

We give a special welcome to those of you who are new to our State Society. We want to meet you and hear your viewpoint. This meeting is the best opportunity to become acquainted with your colleagues in Kansas and learn how our Society works.

Our committee has worked hard to insure that conditions will be optimal for a successful meeting in enjoyable surroundings. We are looking forward to seeing as many of you as possible. If our county society can do anything to make your visit more comfortable, please call on me or any of our members.

ARTHUR C. CHERRY, JR., M.D.

*President*

Shawnee County Medical Society

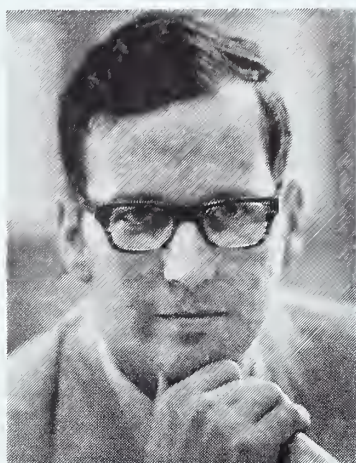


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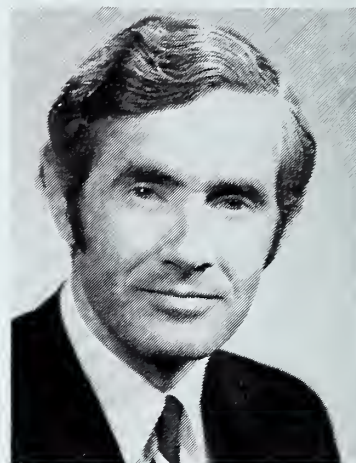
**A COFFEE LOUNGE WILL BE OPEN IN THE EXHIBIT AREA  
THROUGHOUT THE CONVENTION**

# Distinguished Guest Speakers



**Carroll V. Dowden,**  
Executive Editor  
Medical Economics  
Oradell, New Jersey

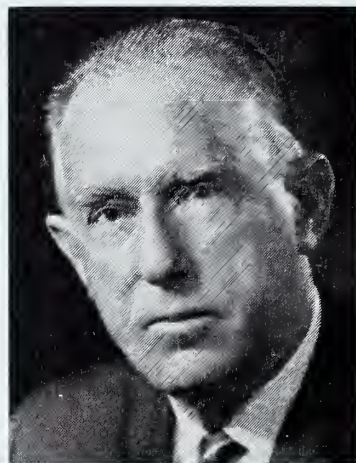
## Economic Environment of Medical Care Change and Challenge



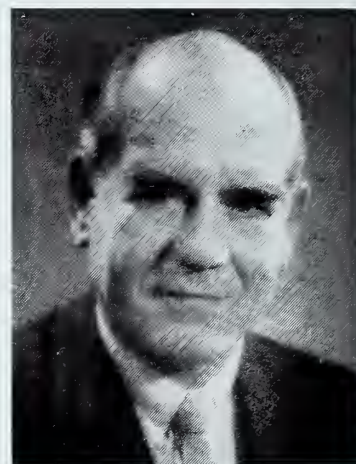
**James H. Hunt,** Director  
Government Relations,  
Group Division  
Aetna Life & Casualty Company  
Simsbury, Connecticut



**James R. Jeffers, Ph.D.,**  
Director  
Health Economics Research  
Center  
University of Iowa  
Iowa City, Iowa



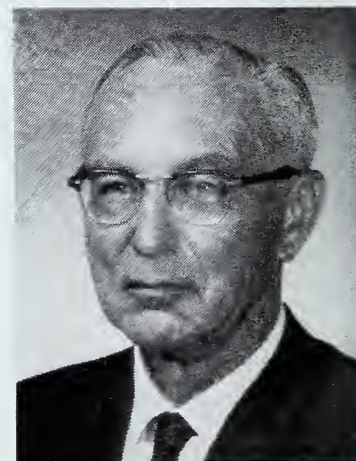
**Honorable Paul J. Fannin**  
U. S. Senator  
Phoenix, Arizona



**Russell B. Roth, M.D.,** Speaker  
AMA House of Delegates  
Erie, Pennsylvania



**H. Phillip Hampton, M.D.**  
Internist  
Tampa, Florida



**John M. Kenney, M.D.,**  
President  
United Foundations for Medical  
Care Service Corporation  
Santa Rosa, California



# Hosts for the Meeting

## Topeka Physicians Arranging 1971 Session

GENERAL CHAIRMAN—Donald R. Pierce, M.D.

### PROGRAM COMMITTEE

John W. Travis, M.D., Chairman

### SPORTS DAY

B. John Ashley, M.D., Chairman—Golf  
Charles Pierce, M.D., Chairman—Trap Shoot

EXHIBITS OPEN AT 1:00 p.m.

REGISTER FOR DRAWINGS

A COFFEE LOUNGE WILL BE OPEN IN THE EXHIBIT AREA  
THROUGHOUT THE CONVENTION

# Sunday Afternoon, May 9, 1971

## Ramada Inn, Downtown

11:00 KAMPAC BOARD OF DIRECTORS  
Norton L. Francis, M.D.  
Wichita, Chairman

HOUSE OF DELEGATES  
Exhibition Arena  
Clair C. Conard, M.D.  
Dodge City, Speaker

12:00 REGISTRATION—TICKETS—INFORMATION  
Lower Lobby  
Specialty Societies—Luncheon and Business Meetings  
Kansas Allergy Society—Parlor C  
William B. Triplett, M.D.  
Topeka, President  
Kansas Society of Anesthesiologists—Gold Room  
William O. Martin, M.D.  
Topeka, President  
Section on Ear, Nose and Throat—Parlor D  
Harry R. Draemel, M.D.  
Salina, President

1:15 REGISTRATION OF DELEGATES  
2:00 FIRST SESSION

Monday, May 10, 1971

*Ramada Inn, Downtown*

7:30 REGISTRATION—TICKETS—INFORMATION  
Lower Lobby

9:00 REFERENCE COMMITTEE A  
Exhibition Arena 3  
*Edward J. Ryan, M.D.*  
*Emporia, Chairman*

REFERENCE COMMITTEE B  
Exhibition Arena 4  
*Robert P. Woods, M.D.*  
*Topeka, Chairman*

VISIT THE EXHIBITS—REGISTER FOR DRAWINGS

A COFFEE LOUNGE WILL BE OPEN IN THE EXHIBIT AREA  
THROUGHOUT THE CONVENTION

SPORTS DAY

KANSAS MEDICAL SOCIETY, GOLF, SKEET AND TRAP ASSOCIATION

*B. John Ashley, M.D., Topeka, President*

9:00 GOLF—Topeka Country Club

2:00 TRAP SHOOT—South Topeka Gun Club (Hwy. 75—2½ miles south of Forbes  
AFB)

FUN NIGHT

6:00 RECEPTION—Lower Lounge

7:00 BUFFET DINNER—Ballroom  
“The Singing Doctors”—Missouri’s Medical Minstrels  
Dancing—Carl Johnson’s Orchestra—“The Best Big Band in Kansas”

*Drawings for a German One-Suiter Suitcase and a Seth-Thomas Digital Clock will be held at the dinner. You must be present to win! Register at the Exhibit Booths.*

TELEPHONE NUMBER ..... 233-4726



# KMS ANNUAL MEETING FUN NIGHT May 10, 1971

The Singing Doctors: Missouri's Medical Minstrels



*Now surgery's the place for me,  
It offers opportunity  
For men who use their hands and not their heads,  
An extrovert who cuts and sews,  
We talk and egotism flows,  
And what we charge is better left unsaid.*

Such is the self-caricature of Dr. James T. (Jim) Brown, who organized "five more extroverts" into a performing group called "The Singing Doctors," a sextet today competing on phonograph records with Barbra Streisand and the Beatles.

"Actually," says the 46-year-old chief of surgery at St. John's Hospital, Springfield, Missouri, "we're probably more competitive with Soupy Sales, Walter Brennan and Mrs. Miller."

The Springfield physicians' show business "sideline"

came about quite by accident. Dr. Brown, active in his local Greene County Medical Society, was named entertainment chairman for the organization's annual banquet—but he was shocked to discover that the event's budget provided no funds to hire professional talent. "In despair, I wrote some lyrics lampooning the various specialties I knew would be represented in the audience and persuaded five good friends that they had to help me out.

"With trembling knees, we mounted the stage that night, feeling like human sacrifices to the cause of entertaining our colleagues and their wives."

The Singing Doctors were a smash hit in their debut. "Our only problem was that we didn't have a number to encore with!" Dr. Brown recalls.

They now not only have an encore, but a bundle of numbers!

## Exhibition Arena

### MORNING

- 7:30 REGISTRATION—TICKETS—INFORMATION  
Lower Lobby
- 7:30 PAST PRESIDENTS' BREAKFAST  
Gold Room
- 7:30 SPECIALTY SOCIETIES—Breakfast and Business Meetings
- Kansas Coroners Association—Parlor A  
*Cyril V. Black, M.D.*  
*Pratt, President*
- Kansas Obstetrical Society—Parlor B  
*James G. Lee, Jr., M.D.*  
*Kansas City, President*
- Section on Ophthalmology—Parlor C  
*B. John Ashley, Jr., M.D.*  
*Topeka, Chairman*

### VISIT THE EXHIBITS—REGISTER FOR DRAWINGS

---

### THE ECONOMIC ENVIRONMENT OF MEDICAL CARE— CHANGE AND CHALLENGE

#### FIRST GENERAL SESSION

*William J. Reals, M.D.*  
*President-Elect, presiding*

9:00 WELCOME

*Arthur C. Cherry, M.D.*  
*President*  
*Shawnee County Medical Society*

RESPONSE

*Francis T. Collins, M.D.*  
*President*  
*Kansas Medical Society*

9:10 THE ECONOMICS OF MEDICAL CARE

*Carroll V. Dowden*  
*Executive Editor, Medical Economics*

9:45 THE VOLUNTARY HEALTH INSURANCE INDUSTRY

*James H. Hunt, Director*  
*Government Relations, Group Division*  
*Aetna Life & Casualty Company*

10:30 INTERMISSION TO VIEW EXHIBITS

11:00 ECONOMIES OF SCALE IN MEDICAL CARE

*James Jeffers, Ph.D., Director*  
*Health Economics Research Center*  
*University of Iowa*

A COFFEE LOUNGE WILL BE OPEN IN THE EXHIBIT AREA  
THROUGHOUT THE CONVENTION



May 11, 1971

Ramada Inn, Downtown

NOON

12:15 GENERAL LUNCHEON—Ballroom

*Francis T. Collins, M.D.,  
President, presiding*

REMARKS AND INTRODUCTION OF GUEST  
SPEAKER

*The Honorable Bob Dole, U.S. Senator  
from Kansas and Chairman,  
Republican National Party*

THE SHAPE OF NATIONAL POLICY IN THE  
DELIVERY AND FINANCING OF MEDICAL  
CARE

*The Honorable Paul J. Fannin  
U. S. Senator from Arizona*

VISIT THE EXHIBITS

REGISTER FOR DRAWINGS

A COFFEE LOUNGE WILL BE OPEN IN THE EXHIBIT AREA  
THROUGHOUT THE CONVENTION

AFTERNOON

SECOND GENERAL SESSION

*Kenneth L. Graham, M.D.,  
First Vice-President, presiding*

1:45 ROLE OF ORGANIZED MEDICINE IN THE  
CHANGING MEDICAL SCENE

*Russell Roth, M.D., Speaker  
AMA House of Delegates*

2:30 THE ADVANTAGES AND NEED FOR PEER SUR-  
VEILLANCE OF HEALTH CARE

*H. Phillip Hampton, M.D., Internist  
Tampa, Florida*

3:15 INNOVATIONS IN MEDICAL CARE: THE  
FOUNDATION CONCEPT

*John M. Kenney, M.D.  
President, United Foundations for  
Medical Care Service Corporation*

3:45 COMMENTS BY PHYSICIAN-CONGRESSMAN

*The Honorable William R. Roy, M.D.  
U.S. Representative, Kansas  
2nd District*

TELEPHONE NUMBER .....233-4726

# Tuesday, May 11, 1971

*Ballroom, Ramada Inn, Downtown*

## EVENING

### ANNUAL PRESIDENT'S BANQUET—KANSAS MEDICAL SOCIETY

5:30 RECEPTION FOR PHYSICIANS AND WIVES  
Lower Lounge

*Sponsored by K.U. Medical Alumni Association*

7:00 DINNER  
Ballroom  
*Francis T. Collins, M.D., presiding*

INVOCATION

INTRODUCTION OF GUESTS

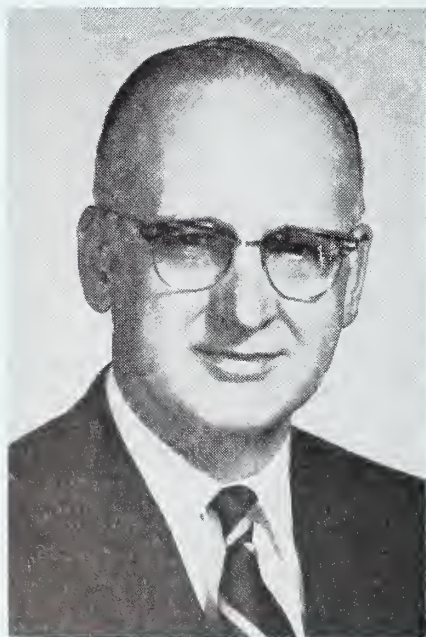
OATH OF OFFICE TO INCOMING PRESIDENT

ENTERTAINMENT: THE FOUR OF US

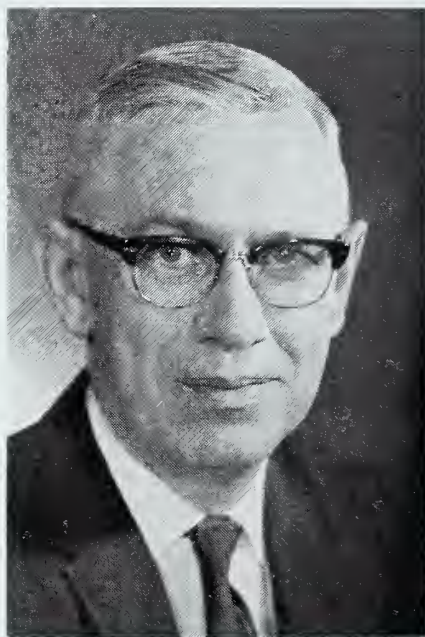
*A Sony Clock Radio will be given away at the banquet. You must be present to win! Register at the Exhibit Booths.*

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## President and President-Elect



FRANCIS T. COLLINS, M.D.  
Topeka



WILLIAM J. REALS, M.D.  
Wichita



# KMS ANNUAL MEETING PRESIDENT'S BANQUET MAY 11, 1971



## The Four of Us



Take two beautiful and talented young women . . . then two handsome and talented young men . . . add university degrees in music and speech, self-discipline and an insatiable desire to make it big in show business . . . and you have **THE FOUR OF US!**

Here is that magic mixture which has created one of the most exciting young instrumental-vocal-entertaining self-contained "packages" now appearing at leading hotels and supper clubs across the U. S.

**THE FOUR OF US** are former school teachers Phil and Marcia Zaugg, and Jim and Dee Martin . . . all outstanding solo artists . . . and when they combine their efforts, the results

are a thrilling evening of exciting music and entertainment.

Phil plays bass and his voice is like those big-name baritones appearing on Broadway. Marcia is a speech and theater graduate of Northwestern and has appeared in both straight dramas and musicals.

Jim is truly a pianist-arranger and appeared with the Toledo Symphony Orchestra at eight. Petite Dee has played and sung featured roles in "Camelot," "Gypsy" and "The Gondoliers." She and Jim were both members of the Gilbert and Sullivan Society at the University of Michigan.

Dr. and Mrs. Francis T. Collins extend a personal invitation to members of the Society and their guests to attend the President's Banquet on Tuesday evening, May 11, 1971.

# Wednesday, May 12, 1971

*Ramada Inn, Downtown*

8:00 REGISTRATION—INFORMATION  
Lower Lobby

8:30 HOUSE OF DELEGATES—SECOND SESSION  
Ballroom

COUNCIL MEETING AND LUNCHEON AT CONCLUSION OF HOUSE OF DELEGATES  
Lower Lounge, South

A COFFEE LOUNGE WILL BE OPEN IN THE EXHIBIT AREA  
THROUGHOUT THE CONVENTION

Visit the Exhibits!

Register for Drawings!

#### Hours

Sunday, May 9—1:00 p.m.-5:30 p.m.

Monday, May 10—7:30 a.m.-4:00 p.m.

Tuesday, May 11—8:00 a.m.-5:00 p.m.

A German One-Suiter Suitcase and a Seth-Thomas Digital Clock will be given away at the Fun Night Buffet on Monday evening, May 10.

A Sony Clock Radio will be given to the lucky winner at the President's Banquet on Tuesday evening, May 11.

YOU MUST BE PRESENT TO WIN!



# Exhibits

The exhibits, located in Exhibit Arenas 1 and 2, will be open Sunday, 1:00 p.m. to 5:30 p.m.; Monday, 7:30 a.m. to 4:00 p.m.; and Tuesday, 8:00 a.m. to 5:00 p.m. Register at the exhibit booths for drawings to be held at the Fun Night Dinner on Monday evening and the President's Banquet on Tuesday evening.

Booth No.		Booth No.	
1	KANSAS TUBERCULOSIS & HEALTH ASSOCIATION Topeka, Kansas	16	DUFFENS OPTICAL COMPANY Topeka, Kansas
2	KANSAS HEART ASSOCIATION Topeka, Kansas	17	KANSAS SOCIETY OF PATHOLOGISTS
3	AMERICAN CANCER SOCIETY, KANSAS DIVI- SION, INC. Topeka, Kansas	18	AMERICAN MEDICAL FACILITIES CORP. Bridgeton, Missouri
4	MERCK SHARP & DOHME West Point, Pennsylvania	19	KANSAS BLUE CROSS-BLUE SHIELD Topeka, Kansas
5	MUNNS MEDICAL SUPPLY COMPANY, INC. Topeka, Kansas	20	LEDERLE LABORATORIES Pearl River, New York
6	MEDICAL PROTECTIVE COMPANY Fort Wayne, Indiana	21	E. R. SQUIBB & SONS New York, New York
7	SMITH, MILLER & PATCH, INC. New York, New York	22	COCA-COLA U.S.A. Chicago, Illinois
8	MID-WEST SURGICAL SUPPLY COMPANY, INC. Wichita, Kansas	26	WM. P. POYTHRESS & COMPANY, INC. Richmond, Virginia
11	C. RAY TYLER AGENCY, INC. Wichita, Kansas	27	ENCYCLOPAEDIA BRITANNICA, INC. Chicago, Illinois
12	PARKE, DAVIS & COMPANY Detroit, Michigan	30	ST. JOHN'S HOSPITAL & SCHOOL OF NURSING, INC. Tulsa, Oklahoma
13	GROUP PLANS AGENCY, INC. Kansas City, Missouri	33	STATLABS, INC. Wichita, Kansas
14	WASHINGTON NATIONAL INSURANCE COMPANY Evanston, Illinois	36	MEDICINE AND RELIGION
15	G. D. SEARLE & COMPANY Chicago, Illinois	37	AYERST LABORATORIES New York, New York
		38	WILLIAM H. RORER, INC. Fort Washington, Pennsylvania

The Kansas Medical Society is grateful for  
the convention program grants received from

**ELI LILLY & COMPANY**  
Indianapolis, Indiana

**THE UPJOHN COMPANY**  
Kalamazoo, Michigan

**A COFFEE LOUNGE WILL BE OPEN IN THE EXHIBIT AREA THROUGH-  
OUT THE CONVENTION—*Compliments of Berlin-Wheeler, Inc., Topeka, and  
Midland Credit Management, Inc., Hutchinson.***

# Woman's Auxiliary to the Kansas Medical Society

*May 9-12, 1971, Ramada Inn, Downtown*

## *Sunday, May 9*

**3:00 REGISTRATION—RESERVATIONS**  
COFFEE AND COKES  
Lower Lounge

## *Monday, May 10*

**8:30 REGISTRATION—RESERVATIONS**  
CONTINENTAL BREAKFAST  
Lower Lounge, South

**PAST PRESIDENTS' BREAKFAST**  
Parlor D, Third Floor

**10:00 PRE-CONVENTION BOARD OF DIRECTORS  
MEETING**  
Lower Lounge, North

**1:00 LUNCHEON—HONORING STATE OFFICERS**  
Washburn University, Mulvane Art  
Center

*Mrs. Dean Miller, President*  
*Woman's Auxiliary to the Shawnee County*  
*Medical Society, presiding*

**2:30 GENERAL SESSION**  
Washburn University, Mulvane Art  
Center

**6:30 FUN NIGHT—RECEPTION AND DINNER**  
Ballroom  
*Entertainment: The Singing Doctors*

## *Tuesday, May 11*

**8:00 REGISTRATION—RESERVATIONS**  
CONTINENTAL BREAKFAST  
Lower Lounge, South

**9:00 GENERAL SESSION**  
Lower Lounge, North

**1:00 SOCIAL HOUR**  
Topeka Town Club, Top of the Tower,  
First National Bank Building

**1:30 LUNCHEON—Topeka Town Club**  
Honoring Mrs. G. R. Diessner, Director  
Woman's Auxiliary to the AMA  
*Mrs. Herman W. Hiesterman*  
*President, presiding*

**3:00 HOME TOUR**

**5:30 K.U. MEDICAL ALUMNI RECEPTION**  
Lower Lounge

**7:30 PRESIDENT'S BANQUET—KANSAS MEDICAL  
SOCIETY**  
Ballroom  
*Entertainment: The Four of Us*

## *Wednesday, May 12*

**8:00 REGISTRATION—RESERVATIONS**  
Lower Lounge, South

**8:30 BUFFET BREAKFAST FOR POST-CONVENTION  
BOARD OF DIRECTORS**  
Lower Lounge, South

**9:30 POST-CONVENTION BOARD OF DIRECTORS  
MEETING**  
Lower Lounge, North  
*Mrs. Donald R. Pierce, presiding*



# Kansas Medical Assistants Society

**May 7-9, 1971, Ramada Inn, Downtown**

## **Friday Evening, May 7**

- 6:30 PAST PRESIDENTS' MEETING—Green Room,  
LaFlambeau Club
- 7:30 REGISTRATION—LOWER LOBBY
- 8:00 "FLOWER POWER"—Lower Lounge  
—*Courtesy Munns Medical  
Supply Company, Inc.*

## **Saturday, May 8**

- 7:30 EXECUTIVE BOARD MEETING—Parlor D
- 8:00 REGISTRATION—Lower Lobby  
COFFEE AND ROLLS—Lower Lounge  
—*Courtesy Berlin Wheeler, Inc.*
- 9:00 CALL TO ORDER—Lower Lounge  
*Darlene Redmond, Quinter  
President  
Kansas Medical Assistants Society*
- INVOCATION AND CREED  
*Agnes Agin, Salina  
President Elect  
Kansas Medical Assistants Society*
- WELCOME  
*Arthur C. Cherry, M.D., Topeka  
President  
Shawnee County Medical Society*
- RESPONSE  
*Francis T. Collins, M.D., Topeka  
President  
Kansas Medical Society*

- 9:30 HOUSE OF DELEGATES  
*Margery Lawrence, Topeka  
Speaker of the House, presiding*

- 10:15 COFFEE  
—*Courtesy Berlin-Wheeler, Inc.*

- 12:00 PRESIDENTS' LUNCHEON—Parlor D

- 1:30 CARRIAGE HOUSE PROJECT  
*Cecil Chamberlin, M.D., Topeka*

- 2:15 DRUG ADDICTION, TREATMENT WITH METH-  
ADONE  
*William Nice, M.D., Topeka*

- 3:00 COFFEE  
—*Courtesy Berlin-Wheeler, Inc.*

- 3:15 E.S.P.  
*Roy Vernon, Topeka*

- 7:00 BANQUET—"THE ZODIAC"—Ballroom

INVOCATION

*Dean M. Miller, M.D., Topeka  
Shawnee County Advisor*

GREETINGS

*Herman W. Hiesterman, M.D., Quinter  
Chairman, KMAS Board of Advisors*

RESPONSE AND INTRODUCTIONS

*Darlene Redmond, President*

SPEAKER: *John Valusek, Ph.D.*

*Psyche Inc., Wichita*

INSTALLATION

*Jenevieve Carter, Salina  
Installation Officer*

## **Sunday, May 9**

- 8:00 EXECUTIVE BOARD MEETING—Room 201  
CONTINENTAL BREAKFAST—Lower Lounge  
—*Breakfast, Compliments Midwest  
Surgical Supply Co., Inc.  
—Decorations, Compliments  
Riley County Chapter*

- 9:00 CALL TO ORDER AND ANNOUNCEMENTS—  
Lower Lounge

INVOCATION

*Betty Daugherty*

GREETINGS

*Connie Mills, Topeka  
President, Shawnee County  
Medical Assistants Society*

- 9:15 NATIONAL OFFICER

- 9:45 TRENDS IN MODERN MEDICINE  
*Oliver E. Ebel, Topeka  
Executive Secretary  
Kansas Medical Society*

- 10:30 COFFEE

- 10:45 TOPEKA'S ZOO OF ZOOS  
*Gary Clark, Director, Topeka Zoo*

- 12:00 LUNCHEON—"MOD ART"—Ballroom

INVOCATION

*Maxine Williams, Kansas City*

SPEAKER: *The Rev. John Dillingham*

*Menninger Foundation, Topeka*

PRESENTATION OF GAVEL—*Darlene Red-  
mond*

ACCEPTANCE—*Agnes Agin*

# House of Delegates

**SUNDAY—MAY 9**

**Exhibition Arena**

**1:15 Registration of Delegates**

**2:00 First Session**

**WEDNESDAY—MAY 12**

**Ballroom**

**8:00 Registration of Delegates**

**8:30 Second Session**

**Council Meeting and Luncheon at Conclusion of House  
of Delegates—Lower Lounge South**

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## Reference Committees

**MONDAY—MAY 10—9:00 A.M.**

**Committee A—Exhibition Arena 3**

**Committee B—Exhibition Arena 4**



# Councilor Reports

## *Activities in the Council Districts of Kansas*

### DISTRICT 2

District 2 is pleased to report that its activities to establish a Student Medical Society with full privileges of membership including the right to vote and hold office has borne fruit. A charter was granted to the University of Kansas Student Medical Society at the Council meeting, September 27, 1970. This is another Kansas first, as no other state medical society accepts medical students with full privileges.

The president of the University of Kansas Student Medical Society is Larry McDonald and the secretary, Louis Forster. The following are members of the new medical society:

Larry R. Anderson	Nancy Ann Lauver
William M. Basow	James Lloyd
Martin L. Bauer	G. Charles Loveland
Louise Bednar	Larry V. McDonald
Thomas A. Bettis, Jr.	William McMahan
Lee Brock	Ronald G. Morford
John C. Budd	Nancy Nowlin
James Burke	Steven R. Nyquist
Brian Buss	Verdon W. Parham
William Ciskey	Ellis A. Penny
Robert K. Clendenin	Donald E. Potter
William D. Edwards	Sheldon H. Preskorn
Richard Egelhoff	Jose E. Raphel
Louis G. Forster	LaDonna Regier
Dennis Fowler	David B. Robinson
Michael H. Gendel	Walter R. Ross, Jr.
Jim Gessler	William S. Ryan
Weldon L. Harris	Howard J. Swanson
Herbert A. Hartman, Jr.	Robert S. Swinney
Sharon Hempler	Joe Teichgraber
J. W. Heryer	Kent Ulrich
Susan Huffstutter	Thomas E. Walsh
Kerry D. Irons	Roy Weber
Marc S. Jacobson	Tim Weber
Norman B. Kahn, Jr.	Barry Wood
Ken King	Robert K. York
Greg L. Knecht	Darrell E. Zeller

District 2 has been very active in securing new members for the Kansas Medical Society and has contributed 33 new members, during the past year, in addition to those in the Student Medical Society.

Among the new members was Harold L. Esrig, D.O., anesthesiologist, at Saint Margaret Hospital, Kansas City, Kansas. Dr. Esrig was the first osteopathic physician to be accepted by the Kansas Medical Society, as reported by the JOURNAL OF THE KANSAS MEDICAL SOCIETY in November 1970. He was

elected to active membership in the Wyandotte County Medical Society at the September 1970 meeting.

Louis Culp, M.D., has been a leader in formulation of peer review in our Council District, and is now serving with the Kansas Medical Society committee to establish peer review in a feasible and workable state.

JOHN D. HUFF, M.D., *Councilor*

### DISTRICT 3

The Third District, Johnson County, had well attended, interesting meetings throughout the year.

Some noteworthy activities were:

A program, presented in cooperation with the Kansas City Area Medical Council in answer to the notorious CBS "documentary." This was well done, and well accepted. It received national recognition in *AMA News* and *Private Practice* journal.

This district has noted with considerable interest current attempts to produce legislation relative to malpractice and medico-legal relationships in general. We are working with the local Bar association in attempt to find answers to the various problems.

Peer review has been considered at length. It is our feeling that local societies are not required to be claims review bodies. Peer review has always been in operation and does not require great overhauling at the present time, merely because someone other than the patient desires financial reassurance.

H. F. COULTER, M.D., *Councilor*

### DISTRICT 4

Our annual meeting was held November 10, 1970, at the Besse Hotel in Pittsburg, and was a dinner meeting with our State President, Dr. Francis Collins, and Executive Secretary, Oliver Ebel, as guest speakers. This was a very informative meeting with an excellent attendance from over the district.

The major problems of our district is the supply of doctors. This has continued for several years and does not seem to be getting any better. We have not been able to reach any agreement as to what is the best method of relieving this situation.

We would like to report that the grand opening for our new Mt. Carmel Hospital, under construction in Pittsburg, will be March 28, 1971. When this hos-

pital is opened, possibly it will be an incentive for doctors to report for practice in this area. We, at least, hope so.

W. G. RINEHART, M.D., *Councilor*

### DISTRICT 5

On two previous occasions the Manhattan Country Club burned during the night after a joint meeting of the Riley County Medical Society and Auxiliary. During the past year, however, the new club survived not one, but two district meetings.

Dr. Speer initiated the new club with the first group meeting the day after it was opened in March. Perhaps the heated discussion and spirited questioning propelled him through the November elections to a seat in the Legislature. We applaud his willingness to speak for medicine where the laws are made.

Dr. Collins, in November, explained the details of the Foundations Program to us. District 5 has appreciated and benefited by Dr. Collins' refinement of the communication lines from the Executive Committee to the individual physician. The societies like the *President's Letter*. It has been useful and informative. Physicians have been pleased by the positive and effective release of information to the public through the media. *Local societies or districts need to initiate such a program.* Each physician needs to work daily on the person-to-person level to improve the image of medicine with patients and friends.

In 1970, Mr. Harder directed that Kansas physicians' fees under Medicaid be prorated. Health care delivery and the system of payments were, in fact, a political football last year, are this year and will be from now on. Political budgetary maneuvers of the Governor's office insures proration again, in spite of our disciplined savings of some \$3,000,000.

We need to inform elected officials of the position of Kansas physicians on health-related issues. Committee members relay their opinions to other legislators who have not been exposed to the full testimony before committees working on health matters. Many legislators decide how to vote on the basis of such opinions from their friends because we (also their friends and constituents), have not told our views as physicians.

Several other state societies have established a system of personal contact with each legislator, assigning a physician who is or can become, a personal friend to keep each lawmaker informed. We must also accent our responsibility to elect competent men to represent the people of Kansas. This personal responsibility rests on each member of the Kansas Medical Society, no matter how busy, dedicated to

patient care, hospital staff responsibility or keeping up with medical advancement. If we "delegate" this responsibility to others, we have failed ourselves and those who follow us in medicine.

GERALD L. MOWRY, M.D., *Councilor*

### DISTRICT 7

This author, having served two terms as councilor of this district, is no longer eligible to serve and therefore this report is a summation of the last six years' experience. This position has enabled me to see dedicated physicians put in untold hours of study and debate in meetings in an attempt to understand each others' viewpoint and to arrive at wise decisions for the betterment of the public.

In this district, there has been no change in the physician population in the last year. There is a definite shortage of physicians in this area, and it is becoming more critical with the increase of patient population. This is especially apparent in urology, orthopedics, and family practice. Our district actively solicits inquiries in these fields.

Our District 7 annual council meeting is always very well attended and this year was no exception. We were pleased to have Dr. Francis Collins address us.

The members of this council district are actively interested in the affairs of the Kansas Medical Society and I am sure that they will continue to maintain this interest.

It has been a pleasure and a good experience to have served as councilor.

RICHARD F. CONARD, M.D., *Councilor*

### DISTRICT 8

District 8, composed of Butler, Chautauqua, Cowley, Elk and Greenwood counties, held a council district meeting on October 15, 1970, at the Arkansas City Country Club. We were pleased to have Dr. Francis T. Collins, president of the Kansas Medical Society, and Mr. R. G. Swenson, executive assistant to the Kansas Medical Society, present some of the problems facing medicine and outline Society activities. Present were representatives from the Butler County Medical Society, in addition to Cowley County members.

At the last Council meeting, January 24, 1971, letters were received from Elk and Chautauqua counties, asking that their charters be revoked and that a charter be issued to the Southeast Kansas Medical Society, which they wish to join. Since the new society will cross council districts, this should be



brought to the attention of the Committee on Council Reorganization.

This district, like the rest in Kansas, is short of physicians and we hope that all Kansas doctors will support any improvement at the University of Kansas Medical Center and any plans to increase the number of physicians for Kansas.

The circuit courses being held in Arkansas City this year have been well attended by both Kansas and Oklahoma physicians.

SIGURD S. DAEHNKE, M.D., *Councilor*

## DISTRICT 9

The Ninth Council District annual meeting in October was attended by an exceptionally large crowd. The group was informed of the progress of medicine in Kansas by State President, Dr. F. T. Collins. He also explained in considerable detail the Peer Review and Foundation concepts.

The Auxiliary was addressed by Mrs. Herman W. Hiesterman, State President.

No other significant medical events have occurred in this district during the year.

S. C. McCRAE, M.D., *Councilor*

## DISTRICT 10

District 10 comprised of Harvey, Marion, McPherson, Reno, and Rice counties, held the council district meeting in the Town Club at Hutchinson, on November 18, 1970. About 35 attended; these and their wives made a nice group. Dr. and Mrs. Wilbur Neel of Hutchinson made the arrangements and served as the Welcome Committee. Nicely done and thank you for a pleasant evening, Dr. and Mrs. Neel.

We were pleased to have Dr. Francis Collins, president of KMS, present to discuss a possible Foundation Plan to work with the various plans being proposed for health care by the politicians. I do not envy our president or executive secretary their positions; both have difficult jobs. We expect our officers and central office personnel to get the answers and to make the right decisions about the problems that come before them that affect us. On top of that, we expect them to attend meetings, to solve the problems that affect our members, to come back winners and make us all happy. The membership should be polled for decisions occasionally.

Swede Swenson, Executive Assistant, passed out a pamphlet of those in attendance at the council meeting to designate if they would like to have the annual

meeting of the Kansas Medical Society held at Tantar-A Lodge, Lake of the Ozarks, Osage Beach, Missouri. This seems to be an effort to furnish fun and games to divert attention from the business of the Society. The Kansas Medical Society has to attend to the business at hand whether we form a foundation or a medical union. If we can do one we can do the other. I would be in favor of forming a medical union if we continue to be harassed by politicians.

Our council meetings have been well attended. A Component Society Charter has been granted to the medical students at the University of Kansas and this is good. These boys are smart and will be assets to KMS. The 1971-1972 class has been selected—125 boys and girls. Their grade point average on a 4-point system was 3.4. Why do these young people want to become M.D.s? Usually because they have some M.D. as an idol. There may be a generation gap, but as a profession we must have some admirable qualities that attracts them.

Dr. Charles E. Brackett, acting dean of the School of Medicine, has made a long report regarding expanding the size of the classes in order to produce more M.D.s. Read this in the February 1971 JOURNAL OF THE KANSAS MEDICAL SOCIETY.

We should be careful about extending licensure or medical practice privileges to so-called paramedical personnel. No sub-society should endorse changes in the Medical Practice Act. I oppose lowering our standards of education. I favor improving the education and making it more relevant to future use.

Organized medicine should do something about malpractice insurance rates and contingent fees by attorneys. It would be well for automobile insurance carriers to try to oppose the contingent fee also. Since attorneys make our laws, head enforcement of our laws, and appoint our judges, it seems we will have a difficult time to change the system and put the blame where it belongs.

A Medical Services Committee for this district held their first meeting for organization on February 2, 1971, at the Wheatland Motel in McPherson.

Attend the annual meeting at Topeka, Ramada Inn, May 9-12, and listen to the various speakers who will discuss "The Economic Environment of Medical Care—Change and Challenge."

Read the JOURNAL—Express yourself in *Vox Dux*.

RALPH R. MELTON, M.D., *Councilor*

## DISTRICT 11

The year 1970 was a busy one for District 11. The Medical Society of Sedgwick County was involved in many projects which were of value to the community and the medical profession.

First, a progress report on the lawsuit which we have entered against the State Department of Social Welfare. As you all know, the Kansas Medical Society entered the suit as a "friend of the court" following the directions of the House of Delegates. At the present time, the suit is under advisement by Judge Tom Raum of the District Court. We have made a motion for a Summary Judgment and no decision has yet been rendered. By the time this reaches print, I am confident that we will know the court's decision.

We initiated an Insurance Review Committee for private insurance carriers in our district.

A public relations consultant has been retained by us and, as a result, we have greatly expanded our public relations efforts within the Wichita community. From our point of view, this has been most valuable.

Last spring, Wichita hosted the 1970 KMS Convention and assisted in carrying out Sedgwick County's first Health Fair Expo of 1970. Forty-three thousand people attended the Health Fair and we believe it to be a resounding success.

In cooperation with other community agencies, the Medical Society of Sedgwick County sponsored a county-wide Rubella Immunization Program. Approximately 80 per cent of all the students in the elementary schools between the kindergarten and fifth grade were immunized.

We completed development in writing of the health component of the local Model Cities Program. We hope that this will serve our community and, perhaps, also the needs of the state of Kansas in a manner which will reflect credit upon the medical profession. Up to the present time, the assistance which was evolved by this medical society for Model Cities is working well.

In the interest of better public relations, we developed brochures for inclusion with communications to patients from doctors' offices. These brochures were used to inform the public on medical topics. This project is an "ongoing" one and, we believe, has served a useful purpose.

Seminars on methods of delivery of health care are being planned for this fall. Meetings have taken place by the union representatives, Wichita State University representatives and the Health Planning Council's resource people, along with medical society representation, to be sure that all aspects of our assistance of medical practice in the United States will be covered in the seminars.

As an aid to both the state and local medical societies, District 11 reviewed its malpractice problems by surveying the membership. The data uncovered has been of value in attempting to begin efforts and correcting what has become one of the major sore spots in medical practice.

We have developed, in cooperation with the local nursing homes, a Joint Utilization Review Committee under the Kansas Title XIX Program, which assures that all goes smoothly in the care of these indigent patients.

Several studies have been initiated in our district, the first concerning the role of the computer in medicine and, secondly, to determine whether or not the Medical Society of Sedgwick County should organize a Foundation.

We have been active in informing both state and national legislators concerning our society's own legislative matters which are of interest to medicine, and we have become more active in local health and medically related programs through the mechanism of getting more physician representation.

Finally, and on a more mundane level, we had a photographic project in our district to update the pictures of all our members. This project was most successful and has resulted in replacement of some of the more youthful countenances by those of more mature and thoughtful men.

M. ROBERT KNAPP, M.D., *Councilor*

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## DISTRICT 12

There have been no problems from this district to bring before the Council or the House. The population of the district has dropped some, which has helped to keep the doctor-patient ratio in a little better balance.

The annual district meeting was held in Kingman and the State President presented the Foundation program. A District Medical Services Advisory Committee has been established and the meeting of this committee was held in February 1971 at Pratt. At this meeting the Blue Shield staff presented application of Resolution 70-5, as well as other business concerning codes and nomenclature.

This year will complete my term of office and a new Councilor will be elected.

F. P. WOLFF, M.D., *Councilor*

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## DISTRICT 13

The District 13 council meeting was held in Hays in December with good attendance. The meeting was held in conjunction with the December meeting of the Central Kansas Medical Society. New members of the district presented the program. These included Dr. Francis R. Applegate, Dr. Roy N. Neil and Dr. Russell Cramm. Dr. Francis Collins addressed the group for the evening portion of the meeting.

There were no unusual problems in the council district during the past year. The councilors attended



the State Society meeting and the House of Delegates meeting during the past year. Council meetings were attended either by myself or the alternate councilor, Dr. Vale Page of Plainville. A meeting of the Medical Service Advisory Committee was held in January with representatives of Blue Cross-Blue Shield.

EUGENE T. SILER, M.D., *Councilor*

### DISTRICT 15

This has been a year of comparative quiet in District 15. Medical manpower has remained much the same, with too few in some areas, adequate or nearly so in others. Of course, census returns continue to report the decrease in rural population. As much talk as there is of a lack of physicians in rural areas, I have not heard, or at least it has not been reported, that anyone has suffered because of distance to, or the unavailability of medical care. After all, the distance that rural people must travel to see a physician may actually be no farther than that in a large city. Neither does there seem to be any great clamor for physician assistants. While physician numbers have remained much the same, Dodge City has seen the closing of one hospital which places quite a burden on the remaining facility.

Our annual council meeting was held in Meade with a good representation from the component societies and with Dr. Collins detailing his proposed Foundation Plan for Kansas. Recent work has also been done on the formation of peer review committees for the district and is to be presented to the individual societies for approval.

R. H. HILL, M.D., *Councilor*

### DISTRICT 16

The Council District 16 is composed of the northwest counties of Kansas. The physicians, for the most part, are located in county seat towns with a small community hospital and from one to six active physicians in each county. There is one multi-county medical society for the whole district. Medical society business is usually carried out following the Kansas University Circuit Course which is held monthly for six months of the year. Special meetings are held throughout the year as needed.

The district felt very honored to have the president of the Auxiliary to the Kansas Medical Society, Mrs. Donna Hiesterman of Quinter, Kansas, come from our district. We are all very proud of Donna and the work that she has done for the Auxiliary and, through it, for the Kansas Medical Society.

The physicians in the area are concerned over the

continuing loss of physicians and other medical personnel from the area. The preceptorship program at K.U.M.C. had been a means of getting some physicians interested in the small towns of Kansas. We feel that, with the changes in the program so that the majority of the students will now spend their time with large clinic groups and specialists in the larger towns and cities, the small towns of Kansas will suffer.

The Regional Medical Program, which we thought two years ago might be of help to us, seems to be about to wither and die as far as any local program is concerned.

The circuit courses are still well attended and provide a forum of informal discussions of medical problems of the area as well as the formal knowledge provided by the program itself.

We were honored the past year in having the president of the Kansas Medical Society, Dr. Francis Collins, Topeka, and the president of the Auxiliary, Mrs. Donna Hiesterman, Quinter, meet with us and the auxiliary for a joint dinner meeting. Dr. Collins spoke on the Foundation Program and other matters of concern to the medical society.

JAMES J. MARCHBANKS, M.D., *Councilor*

### DISTRICT 17

The 17th Council District has met approximately four times in the past year. President Collins enjoyed a good attendance when he spoke to us. Representative Jess Taylor was speaker at another one of our meetings. Many of our doctors have taken an active part in communicating with our legislators. I was fortunate to be able to attend the meeting at Topeka on February 18, where we entertained our legislators.

The number of physicians in this district has remained about the same. We are fortunate to have Dr. Ramon Schmidt join Dr. Calvin Bigler in the practice of surgery at Garden City.

GALEN W. FIELDS, M.D., *Councilor*

### DISTRICT 18

Many events have taken place in this district during the past year which should definitely help to keep our area abreast of the changing medical times.

In Ottawa, they are planning an extensive hospital replacement building program which will actually amount to the construction of a brand new hospital. There were many public relations drives and hard work in getting the public to pass a three million dollar bond issue for this building. Plans are now be-

ing drawn and the project is well under way. The doctor shortage in Ottawa has been helped by the appearance of two new general practitioners and the return from retirement of one general practitioner who is now working part time. This leaves our area in good shape as far as numbers of doctors are concerned.

In Lawrence, plans are under way for construction of a brand new hospital at the University of Kansas to replace Watkins Hospital. At the moment, this will be mainly an outpatient department with a few hospital beds for acute care cases. Money has been appropriated and designing is under way.

The new Blue Cross-Blue Shield comprehensive plan has been started here on an experimental basis and this will run for one year. A new psychiatrist and obstetrician have moved into Lawrence in the last year. Our pediatrics staff has taken part in the new KU Medical Center preceptor program and the students have been visiting and observing the pediatricians in their practice here. Along the line of training, the University has started an engineering course where the students come to the hospital and gain a practical insight into the workings of the modern hospital and the difficulties in efficiency of operation and engineering problems encountered there. This appears to have good practical value for them. The pharmacy students at KU also come to the hospital and help and are trained in the hospital pharmacology aspect of their work. Prior to this year, the occupational therapy students at Lawrence have gone to Kansas City for formal lectures, but this load has been lightened by several of the physicians here taking over their lecture course on the Hill.

The Douglas County Medical Society helped sponsor two series of radio programs this past year. The first concerned the broad aspects of health and human relations. The second series, just getting started, concerns the generation gap and all aspects of it.

This report sums up the main events that have occurred in our district for this year, and it appears that suddenly we are making fast progress in many different areas.

ROBERT W. HUGHES, M.D., *Councilor*

## NOMINATING COMMITTEE

The Nominating Committee met on Friday, February 12, 1971, and submits the following list of nominations for the elective offices of the Kansas Medical Society. Wherever more than one nomination appears these are presented in alphabetical order. A very brief biography accompanies each name.

### President-Elect

**Kenneth L. Graham, M.D.,** Leavenworth. Born in 1921. Graduated from Ohio State University School of Medicine in 1945. This year served as First Vice-President and is chairman of the Relative Value Study committee.

### First Vice-President

**Thomas F. Taylor, M.D.,** Salina. Born in 1926. Graduated from the University of Kansas School of Medicine in 1953. This year served as Second Vice-President and has served as Speaker of the House.

### Second Vice-President

**John N. Blank, M.D.,** Hutchinson. Born in 1907. Graduated from the University of Kansas School of Medicine in 1938. Serving as president of the Kansas State Board of Health; past president of the Kansas Academy of General Practice.

**H. Thomas Gray, M.D.,** Wichita. Born in 1919. Graduated from the University of Arkansas in 1944. Serving as chairman of the Society's Committee for Scientific Study and is chairman of Personal Health Services for Comprehensive Health Planning.

**Alex Mitchell, M.D.,** Lawrence. Born in 1918. Graduated from the University of Kansas School of Medicine in 1950. Serving on the Executive Committee of Kansas Blue Shield, and is president of the Kansas Heart Association.

**Jack D. Walker, M.D.,** Kansas City. Born in 1922. Graduated from the University of Kansas School of Medicine in 1953. He is assistant dean of the University of Kansas School of Medicine and is serving as chairman of the Health Manpower Committee for Comprehensive Health Planning.

### Constitutional Secretary

**Emerson D. Yoder, M.D.,** Denton. Born in 1914. Graduated from the University of Kansas School of Medicine in 1949. Has served as councilor and is now serving as Constitutional Secretary.

### Treasurer

**Chester M. Lessenden, Jr., M.D.,** Topeka. Born in 1918. Graduated from the University of Kansas School of Medicine in 1943. Is now serving as Treasurer.

### AMA Delegate

**John C. Mitchell, M.D.,** Salina. Born in 1913. Graduated from the University of Kansas School of Medicine in 1938. Is now serving as AMA Delegate and is a past president of the Kansas Medical Society.

### AMA Alternate

**Thomas P. Butcher, M.D.,** Emporia. Born in 1905. Graduated from Rush Medical College in 1934. Is now serving as AMA Alternate and is a past president of the Kansas Medical Society.





# Resolutions

*To Be Introduced at First House of Delegates, May 9, 1971*

## REFERENCE COMMITTEES

### REFERENCE COMMITTEE A

Edward J. Ryan, M.D., Emporia, *Chairman*  
Richard M. Chubb, M.D., Baxter Springs  
Gerald L. Mowry, M.D., Manhattan  
Bruce G. Smith, M.D., Arkansas City

### REFERENCE COMMITTEE B

Robert P. Woods, M.D., Topeka, *Chairman*  
Edward G. Campbell, M.D., Emporia  
Henry F. Coulter, M.D., Shawnee Mission  
Edward S. Brinton, M.D., Wichita

### ALTERNATES

Spencer C. McCrae, M.D., Salina  
William W. Burney, M.D., Wichita

*An asterisk following the resolution number indicates that those resolutions require a change of the Constitution and By-Laws, and a two-thirds majority vote of the House of Delegates is needed.*

## RESOLUTION NO. 71-1\*

### REFERENCE COMMITTEE A

*(Prepared and submitted by the Commission on Society Organization)*

### AMA Membership

WHEREAS, Organized medicine has been represented by the American Medical Association and its various state and component county associations for 120 years; and

WHEREAS, The American Medical Association performs functions and provides information to physicians in such areas as scientific, educational, services to members, legislative and governmental, through its many meetings and publications; and

WHEREAS, The individual practicing physician needs to have a mechanism to make his opinions known to organized medicine on a national level in order to help guide the changes in the total health care problems; and

WHEREAS, The Kansas Medical Society is one of the few states that still require compulsory membership to the AMA; therefore, be it

*Resolved*, That the Kansas Medical Society at its 1971 House of Delegates strongly support the AMA principles and goals and encourage its individual

members to belong to the AMA for the foregoing reasons; but, be it further

*Resolved*, That the Kansas Medical Society change its By-Laws in Section 1.1 to not require the members of the Kansas Medical Society to compulsory American Medical Association membership.

## RESOLUTION NO. 71-2

### REFERENCE COMMITTEE A

*(Submitted by Wyandotte County Medical Society)*

### Fee for Collecting AMA Dues

WHEREAS, It has come to our attention that the AMA pays a certain fee to the state societies for collecting their dues; and

WHEREAS, In the case of Kansas, the local societies are responsible for billing and collecting all dues; and

WHEREAS, Previous efforts to obtain a ruling on the possibility of sharing this fee with the local societies has failed; therefore, be it

*Resolved*, That the House of Delegates of the Kansas Medical Society instruct the Executive Committee of this Society to determine a fair and equitable formula for sharing the fee which is received from the AMA for collection of dues with the county medical societies of the state.

## RESOLUTION NO. 71-3

### REFERENCE COMMITTEE A

*(Submitted by Wyandotte County Medical Society)*

### AMA Membership Opinion Polls

WHEREAS, The AMA is the one national organization which represents the majority of the physicians in the country; and

WHEREAS, It is difficult, under the organizational structure of the AMA, for the leaders of the AMA to be aware of grass roots opinions on national issues; therefore, be it

*Resolved*, That the Kansas Medical Society instruct its delegates to the AMA to introduce a resolution at the next AMA House of Delegates meeting which would request the AMA to conduct periodic polls of its membership to obtain opinions on key national issues.

**RESOLUTION NO. 71-4**

REFERENCE COMMITTEE A

*(Submitted by Wyandotte County  
Medical Society)***Joint Commission on Accreditation of  
Hospitals**

WHEREAS, In the opinion of the majority of members of the Wyandotte County Medical Society, the Joint Commission on Accreditation of Hospitals has become too restrictive and, in the opinion of many, has gone beyond the realm of its real concern, that is, health care delivery in the hospitals of our nation; therefore, be it

*Resolved*, That the Kansas Medical Society request that the AMA representatives of the Board of the Joint Commission and our own delegates to the AMA work diligently to place this function in its proper perspective.

**RESOLUTION NO. 71-5**

REFERENCE COMMITTEE A

*(Prepared by the Committee on Peer Review  
and submitted by the Commission on Sociology  
and Economics)***Peer Review***Resolved*, That:

1. The Kansas Medical Society approve the principle of Peer Review; and be it further

*Resolved*, That:

2. The Kansas Medical Society accept the Guidelines submitted by the Commission on Sociology and Economics.

**PEER REVIEW GUIDELINES**

- I. Preamble
- II. Purpose
- III. Organization and Function
  - A. State Peer Review Committee
  - B. District
- IV. Scope of Peer Review
- V. Review Procedure
  - A. Prerequisite for Review
  - B. Review Process
- VI. Disciplinary Jurisdiction
- VII. Responsibility of District Peer Review Committee
  - A. Routine Functions
  - B. Composition
  - C. Availability
  - D. Public Information
  - E. Priorities

F. Liaison with Other Agencies

G. Appeal Mechanism

H. Records

I. Liaison with Hospitals

J. Financing

VIII. Revisions

**Definition of Terms**

The following terms, when used in the body of these suggested guidelines, are to be interpreted according to the definitions that follow.

1. **CLAIMS REVIEW**: a review of individual charges submitted for payment.

2. **UTILIZATION REVIEW**: a study of the frequency of charges or services to determine patterns of service of charges.

3. **MEDICAL AUDIT**: an analysis, or audit, of the medical care given a particular patient at a particular time in a particular setting, implying a retrospective review of records to determine if the essentials of care are documented. This mechanism at times may include a value judgment as to the quality of care given.

4. **PEER REVIEW**: a review of the quality of care provided a patient including documentation of care (medical audit), diagnostic steps used, conclusions reached, therapy given, appropriateness of utilization (utilization review) and reasonableness of charges (claims review). Peer Review is synonymous with quality.

**I. Preamble**

Peer Review evaluates the quality and the quantity of an individual physician's professional service, including ambulatory or out-of-institution services, comparing this with that provided by other physicians in the area. Peer Review should have educational value for the physician, to assist him in his effort to provide care of the highest quality. It also should serve to educate the public to improve their understanding for the value of a professionally indicated service and its true cost. Peer Review should be conducted by physicians in their own geographic area. It should further serve to establish public confidence in the fact that the medical profession wants the patient to receive the optimum amount of care needed for his condition, and to maintain high quality at a reasonable cost, regardless of who assumes responsibility for payment.

**II. Purpose**

Peer Review Committees may review specific cases brought before them by physicians, patients, institutions, insurance carriers, government agencies or other responsible sources.

The committees will provide recommendations



and advice and/or attempt to resolve disputes by arbitration. Their objective will be to maintain high quality of care, aid in the control of the cost of medical care and to keep utilization of services and facilities consistent with accepted standards of practice.

### III. Organization and Function

A. *State Peer Review Committee.* The Kansas Medical Society will establish a state peer review committee consisting of physicians representing the approved specialty societies. The function of the state peer review committee shall include at least the following:

1. The development of recommended guidelines for the use of district review committees.
2. To encourage district peer review committees to conduct their activities in accordance with the suggested guidelines.
3. Encourage approved specialty societies to form peer review advisory committees from whom peer review committees may receive expert opinion as requested. Also encouraged is continued effort by already established review committees, such as the Committee on Maternal Health.
4. To distribute such information to the district committees concerning peer review activity as may be of assistance to them in the performance of their task.
5. To review and act upon cases which may be submitted by district peer review committees or those submitted through the appeal process.
6. Periodically report through the proper commission to the Council and to the House of Delegates upon the work being conducted by the district and the state peer review committees.

B. *District Peer Review Committees.* The Councilor is responsible for the formation of a peer review committee within his district. It should consist of representatives selected by the component societies within the Council District. The committee should have access to counsel from the specialty societies, which have authorized representation in the House of Delegates.

The Peer Review Committee will establish close cooperation with the Grievance Committee of the component societies within the Council District and such other committees as may be appropriate. Representatives of these committees may also be members of the Peer Review Committee.

### IV. Scope of Peer Review

A. To assure high standard of professional care within the district.

B. To review such records and other pertinent information for the purpose of recommending appropriate action.

C. To review and evaluate practice patterns in the districts so that specific educational activities can be instituted to modify such patterns when they appear inadequate.

D. To promptly refer to the component medical society for whatever action such society considers appropriate, evidence of resistance on the part of a physician to accept recommendations made by the Peer Review Committee.

E. To cooperate with the component societies in the district in an effort to inform the public regarding the existence and purpose of peer review committees.

### V. Review Procedure

A. Conditions prerequisite for review.

1. Sufficient evidence to indicate an attempt was made to settle the dispute directly with all parties involved. Cases in litigation will not be considered.

2. Reasonable fees will be used as a guideline in cases involving fee disputes.

3. The committee will review cases only after it has received such information as it considers necessary. The committee may request additional information or conduct its own preliminary investigation before accepting the case for review. The committee may develop such forms as are considered necessary to obtain needed information.

4. To adopt procedures and policies, with appropriate records to process complaints and to notify complainants about disposition of their cases.

5. The complaining party or parties must agree to abide by the final decision of the Peer Review Committee.

B. Review process.

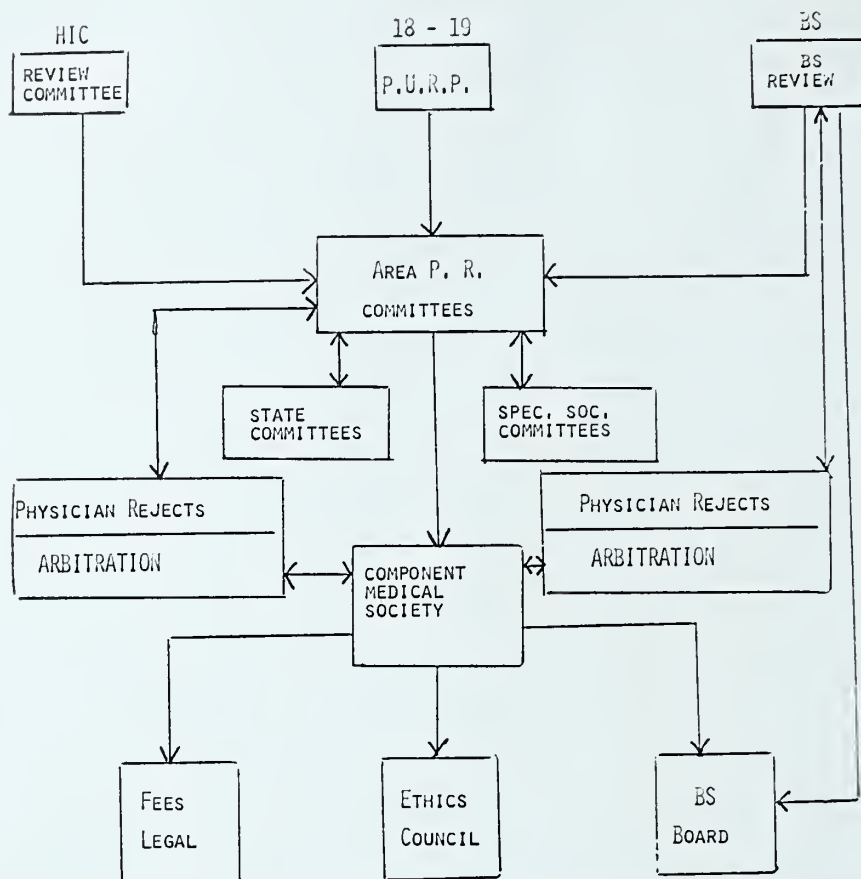
The operation of the Peer Review Committee can be effective only if its decisions are honored by organizations and individuals who request the committee's services.

1. Upon reviewing a properly documented case, the chairman should promptly notify all interested parties that the case is scheduled for hearing. If appropriate, the interested parties may be invited to attend the hearing.

2. The committee should attempt to reach a decision on all cases within ninety (90) days. If the District Committee cannot reach a decision or does not desire to hear the case, it has the obligation of referring the case to the State Peer Review Committee. All interested parties should be promptly notified of decisions reached.

3. In the event of an appealed decision, the District Chairman should immediately submit the case to the State Peer Review Committee together with all appropriate documentation.

## CLAIMS



The physician may accept at any point. His reject procedures are marked.

## VI. Disciplinary Jurisdiction

The Peer Review Committee is not a disciplinary body. It does, however, have an obligation to report its findings and make recommendations to other appropriate county, district or state committees requesting the latter take action when warranted by the circumstances.

## VII. Responsibility of a District Peer Review Committee

A. Routine functions of a district peer review committee should be:

1. Perform services delineated in Section IV.
2. Avoid interference with established hospital and/or ECF peer review committees but work in close harmony with them.
3. May assume the responsibility for utilization review in addition to peer review if requested to do so by the medical staff or the institutions involved.

B. Composition and tenure of the committees:

1. The committee should consist of a chairman and two (2) or more members and be broadly representative of the medical community.

2. Members should represent as many of the approved specialties as possible.

3. Where possible, terms of service should be staggered to insure continuity.

C. Committee availability:

The committee should accept referrals from all sources including the patient, physician, insurance carrier and governmental agency.

D. Public information:

Committees should keep their component medical societies regularly informed of their activities. The component societies will be responsible for dissemination of this information to their members and to the public.

E. Priorities:

1. Peer Review of quality of practice:
  - a. Professional Competency
  - b. Under-utilization
  - c. Over-utilization
2. Unusual charges
3. Suspected fraudulent claims (the committee will generally submit the information to the component society for action).

F. Liaison with other agencies:



The Peer Review Committee may invite the involved parties. At its discretion the committee may request consultation with other informed sources.

**G. Right of appeal mechanism:**

It is the Peer Review Committee's responsibility to obtain the facts and make recommendations based upon the findings. In the event of disagreement, appeals are available. Refer to III.A.5; V.3 and VI.

**H. Records:**

The committee should adopt formal written procedures and policies with special forms to record and process complaints and to notify the complainants about the disposition of their cases. Refer to V.A.3 and V.A.4.

**1. Liaison with hospitals:**

Close cooperation with the chairman of appropriate hospital medical staff committees is essential.

**J. Financing:**

Financing of the committees' work and establishing charges for their efforts should be locally arranged. Assessing charges against the patient or the physician would establish an unfair financial burden. However, insurance carriers, governmental agencies and other individuals or agencies requesting an unusual amount of investigation and review should be expected to pay a reasonable fee for services rendered.

## VIII. Revisions

It is recognized this document will require occasional revision. The Commission for Sociology and Economics is responsible for periodic revisions.

### RESOLUTION NO. 71-6

REFERENCE COMMITTEE A

*(Submitted by Wyandotte County  
Medical Society)*

#### Peer Review

WHEREAS, There are many concepts of peer review and how this review shall be done; and

WHEREAS, The Kansas Medical Society has not adopted an official policy on the overall subject of peer review; therefore, be it

*Resolved*, That the Kansas Medical Society adopt as a policy statement the following:

The Kansas Medical Society is in favor of and will promote the execution of peer review only if it is truly *peer* review—that is, review of physicians by *physicians*.

### RESOLUTION NO. 71-7\*

REFERENCE COMMITTEE A

*(Prepared and submitted by the Commission on  
Society Organization)*

#### Councilor Voting

WHEREAS, The councilor is most knowledgeable in the functions of the Society by virtue of his position and experience; and

WHEREAS, It is indefinite from a perusal of the Constitution and By-Laws whether the councilor is or is not a voting member of the House of Delegates; therefore, be it

*Resolved*, That the councilor shall be a voting member of the House of Delegates separate from the number of authorized delegates of his component society; and be it further

*Resolved*, That the alternate shall exercise the vote in the absence of the councilor.

### RESOLUTION NO. 71-8\*

REFERENCE COMMITTEE A

*(Prepared by the Committee on Council  
Reorganization and submitted by the  
Commission on Society Organization)*

#### Council Reorganization

WHEREAS, Physician representation on the Council varies more than tenfold; and

WHEREAS, The Commission on Society Organization is instructed by Resolution 70-55 of the House of Delegates to submit a reapportionment plan for the Council; therefore, be it

*Resolved*, That the Society adopt a plan for reapportionment of its Council districts to provide one councilor and one alternate for each seventy-five (75) members in the district. Each district with any number of members less than one hundred fifty (150) shall be allowed one councilor and alternate; and be it further

*Resolved*, That changes in Council representation shall be determined by the annual census of membership in the office of the executive director who shall notify the component societies of districts affected in time for the election.

The following resolutions were referred by the 1970 House of Delegates to the Commission for Society Organization, for study and action.

*This resolution was rejected by the Commission:*

**Second Vice Presidents  
(Resolution No. 70-67)**

*Resolved*, The By-Laws be modified so that the Kansas Medical Society shall have two second vice presidents having equal privilege and responsibility.

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**RESOLUTION NO. 71-9\***

REFERENCE COMMITTEE A

*Referred to the House of Delegates without recommendation:*

**Revision of Section 6.6  
(Resolution No. 70-68)**

*Resolved*, That Section 6.6 of the By-Laws titled Nominations be modified in its first sentence as follows: The words "annual session by ballot from the past presidents who are still members of this Society" are changed to read "*annual session by ballot by the Voting Council.*"

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**RESOLUTION NO. 71-10\***

REFERENCE COMMITTEE A

*Referred to the House of Delegates with approval:*

**(Resolution No. 70-70)  
Solicitation of Votes**

*Resolved*, Section 6.73 of the By-Laws of the Kansas Medical Society titled "Solicitation. . . Any member judged by the Council to have solicited votes for himself shall be ineligible for office for two (2) years" be rescinded.

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**RESOLUTION NO. 71-11**

REFERENCE COMMITTEE A

*Approved by the Commission as amended:*

*(Amendment in italics)*

**Medical Politics (Resolution No. 70-66)**

*Resolved*, The candidates for offices within the Kansas Medical Society shall, at least sixty (60) days prior to election, have their views on major issues confronting the profession *in a special mailing of the Kansas Medical Society*. Such views can be developed by an appropriate questionnaire, prepared by the Editorial Board of the JOURNAL and submitted to each candidate for response.

**RESOLUTION NO. 71-12**

REFERENCE COMMITTEE B

*(Prepared and submitted by the Commission on Society Organization)*

**KMS Information Brochure**

WHEREAS, There is a need to inform the new members of the Kansas Medical Society of the rights, privileges and responsibilities of membership; and

WHEREAS, There is a need for information to new members of the Kansas Medical Society regarding insurance and retirement benefits available through the Kansas Medical Society; therefore, be it

*Resolved*, That the Kansas Medical Society approve the publication of a brochure for the information of its new members; and be it further

*Resolved*, That the initial printing be ample for distribution to all members.

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**RESOLUTION NO. 71-13**

REFERENCE COMMITTEE B

*(Prepared by the Committee on Religion and Medicine and submitted by the Commission for Health Services)*

**Medicine and Religion**

WHEREAS, The cooperative activity of physicians and clergy in the dealing with and care of the ill patient can be improved by better understanding and communication between the two professions; therefore, be it

*Resolved*, That the Society support and encourage the editorial board of the JOURNAL OF THE KANSAS MEDICAL SOCIETY to include in the JOURNAL a monthly feature dealing broadly with religion and medicine.

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**RESOLUTION NO. 71-14**

REFERENCE COMMITTEE B

*(Prepared and submitted by the Commission on Medical Practice and Special Societies)*

**Infant Mortality**

WHEREAS, The infant mortality in the United States is declining, but at a less rapid rate than in the period 1933-1957 and less rapidly than in some other countries of comparable socio-economics and health care systems; and

WHEREAS, These differences in mortality rates



cannot be readily accounted for on the basis of differences in definitions or methods of data collection; and

WHEREAS, Many controllable factors operate prior to delivery, at the time of delivery, and following delivery to influence infant mortality; and

WHEREAS, Responsibility and control of these obstetric and pediatric factors are shared by the pediatrician, obstetrician, and family practitioner; therefore, be it

*Resolved*, That knowledge and skill in both obstetric and pediatric techniques are important and necessary for all physicians with responsibility in this area, and be it further

*Resolved*, That training programs in obstetrics and pediatrics should overlap so that both specialists are trained in each others' discipline and that a clear definition of the time when the responsibility of the obstetrician ends and the pediatrician begins is established, and that special training in infant intubation and resuscitation be included; and be it further

*Resolved*, That training in Family Practice should emphasize preventive techniques and recognition of anticipated difficulty so that early referral to appropriate specialists and newborn care centers be made; and be it further

*Resolved*, That design, development and construction of newborn intensive care units, staffed by trained personnel, should receive equal emphasis in medical centers throughout the state with that of other and present intensive care units; and be it further

*Resolved*, That this resolution be transmitted to the University of Kansas Medical Center, Departments of Obstetrics and Pediatrics, and to the American Board of Obstetrics and Gynecology and the American Board of Pediatrics.

## RESOLUTION NO. 71-15

### REFERENCE COMMITTEE B

*(Prepared by the Committee on Postgraduate Education and submitted by the Commission for Education)*

#### Clearing House for Postgraduate Education

WHEREAS, Some physicians need encouragement to participate in a wide range of educational opportunities; and

WHEREAS, Physicians do not always know of the opportunities that may be available; therefore, be it

*Resolved*, That the Kansas Medical Society explore the establishment of a clearing house to provide continuing information to the medical profession on educational opportunities including meetings, conferences, films and literature.

## RESOLUTION NO. 71-16

### REFERENCE COMMITTEE B

*(Prepared by the Committee on Postgraduate Education and submitted by the Commission for Education)*

#### Liaison Committee

WHEREAS, Area advisory councils have been established without consultation with the component medical societies of the area; and

WHEREAS, Physicians who have less interest and might less adequately represent the medical profession than some others who would be available have at times been appointed to such councils; and

WHEREAS, Project priorities have not always been locally established and therefore are not always consistent with opinions of the medical profession in the area; therefore, be it

*Resolved*, That each component medical society in an RMP or CHP district appoint one or two representatives to serve as a special consultation group which might act as a liaison committee; and be it further

*Resolved*, That each physician so appointed should be reasonably knowledgeable and influential, and that he should forcefully represent his medical society; and be it further

*Resolved*, That such liaison committees recommend projects to the area planning council for both CHP and RMP which will improve the educational opportunities and the areas of service in the field of health; and be it further

*Resolved*, That the liaison committees in each RMP and CHP area shall advise representatives of health professions of its willingness to cooperate with them in worthwhile projects of education and service designed to improve the quality and the availability of health care to all people in the area.

## RESOLUTION NO. 71-17

### REFERENCE COMMITTEE B

*(Prepared by Medical Services Advisory Committee and submitted by Commission on Sociology and Economics)*

#### Blue Shield Comprehensive Plan

WHEREAS, The Medical Services Advisory Committee held a series of meetings in the eighteen council districts in cooperation with Kansas Blue Shield; and

WHEREAS, These discussions brought approval at the grass roots level for the program with the following problems and objections being stressed:

1. Ways that Blue Shield could reduce paperwork apparently inherent in the program.

2. Suggestions that outpatient drugs be written by Medical Indemnity of America (MIA), Blue Cross, or separate underwriting than Blue Shield.

3. Concern about handling the Extended Care Facilities (ECF) and Home Health Agencies (HHA) utilization review aspects.

4. Concerns about proper advertising and subscriber education.

Therefore, be it

*Resolved*, That the Kansas Medical Society approve the Comprehensive Benefit Program as presented by Kansas Blue Shield; and be it further

*Resolved*, That the four problems above be discussed thoroughly with the appropriate body of the Kansas Medical Society before implementation takes place.

### RESOLUTION NO. 71-18

REFERENCE COMMITTEE B

*(Prepared and submitted by the Commission for Health Services)*

#### Joint Committee—RMP-CHP

WHEREAS, The Kansas Medical Society combined its committees to work together in the area of Comprehensive Health Planning and Regional Medical Programs; therefore, be it

*Resolved*, That the aims and fundamentals of Regional Medical Program and Comprehensive Health Planning be supported; and be it further

*Resolved*, That physicians be urged to participate in health planning at all levels; and be it further

*Resolved*, That local initiative and need be the basis for health planning; and be it further

*Resolved*, That the concept of state enfranchisement of hospitals be opposed; and be it further

*Resolved*, That close liaison between CHP-RMP and the medical society be vigorously encouraged.

### RESOLUTION NO. 71-19

REFERENCE COMMITTEE B

*(Prepared by the Committee on Intern-Resident and submitted by the Commission for Education)*

#### Graduate Medical Education (Interns-Residents)

WHEREAS, The need for additional physicians in many specialties including Family Practice is apparent to the medical profession in this state and to the public; and

WHEREAS, There is evidence to indicate that physicians tend to locate in the vicinity of their intern and residency training; and

WHEREAS, Kansas provides internships in Kansas City and Wichita only and residency training (except for psychiatry which is also conducted in Topeka) in Kansas City and Wichita only; and

WHEREAS, Three component societies of the Kansas Medical Society have indicated firm interest in the development of graduate medical education programs; and

WHEREAS, The cost of such graduate medical education programs should not be borne by the individual hospitalized patient; therefore, be it

*Resolved*, That the Legislature be requested to continue and expand its support of medical education in the state of Kansas and specifically to continue support of graduate medical education as commenced by House Bill 2046 of the 1970 Session.

### RESOLUTION NO. 71-20

REFERENCE COMMITTEE B

*(Prepared by the Committee on Postgraduate Education and submitted by the Commission for Education)*

#### Postgraduate Education

WHEREAS, Continuing education is a necessity for every practicing physician; and

WHEREAS, The circuit courses offered in Kansas represent one, but only one, part of a broad range of educational opportunities; and

WHEREAS, The Department of Postgraduate Education at the University of Kansas School of Medicine cooperates closely with the Kansas Medical Society; therefore, be it

*Resolved*, That the Kansas Medical Society continue to be a sponsoring agency for the efforts of the Department of Postgraduate Education.

### RESOLUTION NO. 71-21

REFERENCE COMMITTEE B

*(Prepared and Submitted by the Commission for Education)*

#### Clinical Traineeship Study

WHEREAS, Methods of continuing education involve more than passive attendance at courses, symposia, workshops, etc.; and

WHEREAS, One of these better methods is the so-called "clinical traineeship" in which a physician works in a teaching hospital for a substantial period of time; and



WHEREAS, Participation in such traineeships presents economic difficulties for the trainee; and

WHEREAS, The trainee's practice needs coverage during his traineeship; therefore, be it

*Resolved*, That a study group be formed to explore this problem and propose possible solutions.

## RESOLUTION NO. 71-22

REFERENCE COMMITTEE B

*(Prepared by the Committee on Intern-Resident and submitted by the Commission for Education)*

### Educational Membership

WHEREAS, The Wyandotte County Medical Society has a category of membership called Educational Members which includes students, interns and residents; and

WHEREAS, This membership category has all the privileges of active members at reduced dues; and

WHEREAS, The Kansas Medical Society By-laws state that interns and residents have full privileges while in full time training; therefore, be it

*Resolved*, That this House of Delegates urge all component societies to amend their by-laws to provide for a similar category of membership in the component society.

## RESOLUTION NO. 71-23

REFERENCE COMMITTEE B

*(Prepared and Submitted by the Commission for Health Services)*

### Future Care Committee

WHEREAS, Matters pertinent to the future of medical care in Kansas remain of prime importance to patients and physicians; and

WHEREAS, The evolving process and planning remains in substantial flux; therefore, be it

*Resolved*, That;

1. The Kansas Medical Society continue the Committee on Future Medical Care.

2. The Kansas Medical Society urge the Kansas Legislature to appoint a multidisciplinary committee. In order to design and present to the legislature a workable, acceptable and effective program for the development of allied health in the state of Kansas, the Kansas Medical Society will be happy to supply

suggestions for membership to the multidisciplinary committee.

## RESOLUTION NO. 71-24\*

REFERENCE COMMITTEE B

*(Prepared and submitted by the Commission for Health Services)*

### Society Legislative Policy

WHEREAS, Legislation affecting the health of the public and the practice of medicine is becoming increasingly important; and

WHEREAS, Society position on legislation has in the past frequently been defensive and hastily determined in time of crisis; and

WHEREAS, The Society needs a permanent structure for continuously and carefully considering legislation; therefore, be it

*Resolved*, That a committee be established which shall be charged with creating an ongoing and a positive Society position on health legislation; and be it further

*Resolved*, That that committee shall be known as the Committee on Legislation; and be it further

*Resolved*, That the committee shall consist of not fewer than five (5) members each elected for a three (3) year term for as long as they are willing to serve and the Society wishes to continue their service; and be it further

*Resolved*, That an election shall be held at the first meeting of the House of Delegates at each Annual Session for those whose terms have been completed; and be it further

*Resolved*, That the Committee on Legislation shall meet at least four (4) times each year and more frequently if necessary; and be it further

*Resolved*, That the committee on legislation report to the Council and to the membership as requested by the president of the Society, but shall make an annual report to the House of Delegates at the first meeting of each Annual Session; and be it further

*Resolved*, That the first election of the Committee on Legislation shall be held at the final session of the House of Delegates at the Annual Session of 1971, and that two (2) members of the committee shall be elected for three (3) year terms; two (2) for two (2) year terms; and one (1) for one (1) year term.

**RESOLUTION NO. 71-25**

## REFERENCE COMMITTEE B

**(Prepared by the Committee on Services to Members and submitted by the Commission on Society Organization)**

**Retirement Plan**

WHEREAS, Many plans are available to physicians on an individual basis; and

WHEREAS, These plans have limitations because of the fact they are sold and purchased on an individual basis; and

WHEREAS, The Services to Members Committee has met and discussed the need for the Kansas Medical Society to have a sponsored plan whereby its members might be able to take advantage of mass purchasing power while still maintaining a plan suited to the individual physician's needs and desires; therefore, be it

*Resolved*, That the Kansas Medical Society endorse the concept of making available to all of the members retirement plans through the marketing division of Columbian Securities Corporation, and such investment and fringe benefit vehicles offered by Security Benefit Life and Security Management Corporation, which are all Kansas-based companies.

**RESOLUTION NO. 71-26**

## REFERENCE COMMITTEE B

**(Prepared by the Committee for Control of Cancer and submitted by the Commission on Medical Practice and Specialty Societies)**

**AMA Cancer Committee**

WHEREAS, There has been a sustained effort for the past year to establish a cancer committee of the American Medical Association; and

WHEREAS, Such a committee offers little possible benefit and great possible obstruction; and

WHEREAS, The AMA has a standing policy against disease-oriented committees; therefore, be it

*Resolved*, That the Kansas Medical Society continue to oppose actively the creation of a cancer committee by the American Medical Association; and, be it further

*Resolved*, That Kansas delegates to the American Medical Association be made aware of the problem; and, be it further

*Resolved*, That copies of this resolution be forwarded to Dr. Kenneth Sawyer, Denver, Colorado, and Dr. William Barclay, of the AMA staff.

**NECROLOGY REPORT**

Following is a list of the members of the Kansas Medical Society whose deaths have been reported since the last meeting of the House of Delegates.

<i>Name and Address</i>	<i>Age</i>	<i>Date</i>
Bert Anderson, <i>Victoria</i>	86	Dec. 14, 1970
Richmond E. Bennett, <i>Beloit</i>	65	Mar. 17, 1970
Ralph I. Canuteson, <i>Lawrence</i>	74	Mar. 31, 1970
Dudley B. Chads, <i>Kansas City</i>	49	June 4, 1970
Charles C. Dennie, <i>Mission Hills</i>	87	Jan. 13, 1971
Edmond de St. Felix, <i>Wichita</i>	62	Nov. 16, 1970
Vernon B. Dowler, <i>Dodge City</i>	75	Oct. 3, 1970
Charles A. Fisher, <i>Paola</i>	92	May 29, 1970
P. F. Gatley, <i>Louisburg</i>	93	May 13, 1970
George J. Goodsheller, <i>Marion</i>	94	Jan. 12, 1971
Louis G. Graves, <i>St. John</i>	62	April 17, 1970
Edward J. Grosdidier, <i>Kansas City</i>	69	June 9, 1970
Ferdinand C. Helwig, <i>Kansas City</i>	71	Mar. 23, 1970
James E. Henshall, <i>Osborne</i>	82	Aug. 13, 1970
John O. Kennedy, <i>Topeka</i>	57	Dec. 1, 1970
Forrest L. Loveland, <i>Topeka</i>	84	Aug. 17, 1970
Ralph Major, <i>Kansas City</i>	86	Oct. 15, 1970
Benjamin L. Myers, <i>Santa Rosa, Calif.</i>	92	Jan. 9, 1971
Lauren B. Moriarity, <i>Bonner Springs</i>	61	Aug. 17, 1970
Chester M. Nelson, <i>Oberlin</i>	69	Aug. 9, 1970
Arthur E. O'Donnell, <i>Junction City</i>	93	Feb. 12, 1971
Phillip M. Platten, <i>Salina</i>	42	Aug. 15, 1970
Paul M. Powell, <i>Topeka</i>	72	May 7, 1970
G. Sherman Ripley, Jr., <i>Salina</i>	53	May 14, 1970
William A. Smiley, Jr., <i>Goodland</i>	52	Jan. 9, 1971
James R. Smithheisler, <i>Homestead, Fla.</i>	92	Dec. 26, 1970
Ralph W. Springer, <i>Harper</i>	91	Mar. 15, 1970
William Steinhauser, <i>Hiawatha</i>	99	Nov. 25, 1970
John G. Swails, <i>Wathena</i>	80	Feb. 13, 1971
Eldden J. Teeter, <i>Goodland</i>	76	Sept. 20, 1970
D. Jack Tiller, <i>Wichita</i>	54	Aug. 22, 1970
Frank A. Trump, <i>Ottawa</i>	80	Oct. 21, 1970
Joseph V. VanCleve, <i>Wichita</i>	66	June 4, 1970
Roger K. Wallace, <i>Manhattan</i>	48	Sept. 25, 1970
John I. Waller, <i>Halstead</i>	60	Sept. 27, 1970



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## *The President's Message*

How quickly the time passes when one is busy. At the close of my term as president, I will reflect a little. Some of the goals I set for myself and the Kansas Medical Society have been achieved. Some have not.

Our membership is more informed on issues facing medicine today. This is due in part to concerted efforts by your state officers and staff to keep you aware of our actions. It is also due to the mushrooming of proposed health legislation. Most important is the fact that you as a member of KMS are more willing to be informed and to state your views to help guide Society policy. We have planned and we have acted. This fact is satisfying to me as your president for it answers the request I made in my first editorial, that we make the year 1970-71 a "positive, constructive, action-oriented year."

There has been much action that included positive, constructive thinking due to the activities of all the committees as well as the very gratifying cooperation each of you have given your officers in our attempt to guide the Society. For this cooperation and hard work by our members, I sincerely thank each of you.

There is much yet to be done to provide effective leadership for the stated constitutional purpose of the Kansas Medical Society. If organized medicine is to survive under the auspices of private enterprise, we must continue to be involved in the policy determinations made by our elected state and national legislators, as well as those of all sections of organized medicine. If we choose not to be active in all issues pertaining to health care to provide what is best for our patients, then we resign ourselves to



accept the dictates of political expediency, thereby defaulting on one of the privileges of being a physician—that of keeping the welfare of our patients uppermost in our activities.

Thank you, one and all, for giving me the privilege and honor of serving as your president.

*President*



## Editorial COMMENT

The miracle of medical progress can be read in the sample drawer, and when the latter is being dug through to provide the essentials of pediatric health and welfare for one's grandchildren, it is impossible to avoid a comparison with the medical folkways of a half century or more ago. As we look back, the change is not only in the agents but, more importantly, the rituals with which they were administered.

As we recall, the commonest affliction, at least in the barefoot summertime, was the bee sting. There was first the unthinking step into the clover, then the sting, then the one-footed hopping into the house with the howls alerting the emergency room crew (from whatever else she was doing at the moment), so that by the time the patient arrived, the old granite basin was on the floor, the hot water was in it, and a dollop of Lysol was being poured into it. Just what Lysol did for bee stings, we don't know, but that was the routine. In retrospect, recalling the temperature of the water, we're inclined to think it was a simple matter of cauterization. At least, we were assured of getting one foot or the other washed practically every day. At some later time, we became aware that Lysol had not been invented exclusively for this purpose. Ladies apparently used it in some mysterious way which, even after our juvenile ponderings, didn't seem to have any apparent relation to bee stings.

Cuts and scratches were, in those pre-Band-Aid days, anointed with iodine, giving another opportunity to obtain a little sympathy by the decibel level of our response. The germ theory of disease was pretty well accepted at that time, though still somewhat esoteric. If we didn't get to the iodine in time, we might get blood poisoning. We weren't sure just what this was, but there was the little skull-and-crossbones symbol on the rat poison, so it seemed probable that it involved a lot of little skulls-and-crossbones racing around in your blood, something def-

initely to be avoided. There was the happy day when the first bottle of Mercurochrome was brought home. Spread well beyond the limits of the wound, it had a satisfying resemblance to blood, and it didn't burn. The comfort of the latter carried some sense of insecurity that it obviously couldn't be doing as much good.

Burns were endemic with seasonal peaks around July 4. We stood prepared with a can of Unguentine approximating the size of the peanut butter can at the butcher shop. Dad must have expected all of the oil wells in Butler County to catch fire at once. As it was, the most dramatic occasion for its use came one day when we had been putting a pinch of this and a drop of that in the test tube of our chemistry set. As the results smoked and foamed up, it became a matter of getting it on the rug or clamping a thumb over it. The former was deemed to have the greater potential for trauma, so we clamped, and the resultant burn was a beauty. We recovered, but Dad never got completely out of the doghouse he built for himself by bringing a chemistry set home to an embryo Dr. Jekyll who couldn't even read yet.

This was in the days of "auto-intoxication" when it was considered mandatory for the colon to be synchronized with the Greenwich Observatory. Not giving any more thought to such processes than most small boys, we were cornered from time to time and informed that our disposition was bad, and we received a large serving of licorice powder. This wasn't too hard to take although it never ranked with the five-for-a-penny licorice gumdrops from the corner grocery store. If this failed, we got a dose of calomel at bedtime followed the next morning by something that sounded like "sallow patica." It seemed the latter should have been enough in itself, but we were informed it was to keep the calomel from making us feel "logey." We never knew what it meant



to feel logey and still don't, an apparent tribute to the success of the sallow patica.

The "usual childhood diseases" haven't changed too much, but we had one dignifying feature denied modern youth: the red cardboard sign nailed to the front of the house announcing the pestilence within. It served nothing in treatment, but gave fair warning to the rest of the gang to hold their noses when passing the house. Our bout with chickenpox had one unexpected dividend: acquainting us with the scars. A good many years later, we were able to make some points in physical diagnosis class by being the only one able to identify correctly the scar on the patient-subject's chest. Of course, he had a liver the size and texture of a concrete block which we missed, but we pegged that chickenpox scar.

The only serious medical event of our memory was a bout of pneumonia—the real thing, none of this sissy virus stuff, since viruses hadn't been invented. The first principle of treatment was to keep the room just above freezing. This posed some threat to the attendants, but under the covers we weren't aware of it because of the liberal application of Musterole covered by flannel. The theory apparently was to alternately freeze and fry the bugs. Considering the presents we received, it didn't seem such a poor deal. We didn't realize how seriously the family was taking it until awakening one night to find a SPECIALIST standing by the bed. Now, even in a doctor's family, getting someone clear over from Wichita to El Dorado (which was a three-tire trip) meant this was no ordinary pip. We realized that, to do our part, we'd either have to die (which, at five years, most people don't want to do) or get well. We got well and have slept with the windows shut ever since.

Then came the dawn of the New Day of Preventive Medicine. There were these Vital Amines, see, that everyone had to have. From coast to coast, children were dosed with oil from the liver of the cod, a development which kids and cod agreed never should have occurred. The manufacturers must have seen the making of a revolt as they proceeded to try to disguise the taste. In the interest of strong bones, we were conned into trying the new preparation and have only recently overcome our suspicion of the pharmaceutical industry. What we mean is—well, cod liver oil and *chocolate*? Talk about pollution.

In a way, it's unfortunate we have so many effective remedies today. We've substituted a lot of high-powered, high-priced miracle drugs for the laying on of hands, and that, we suspect, is a large part of the public's gripe.—D.E.G.

## NEW MEMBERS

*The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.*

Frank R. Bowers, M.D.  
3244 E. Douglas  
Wichita, Kansas 67208

William Ciskey (Student)  
K.U. Medical Center  
Kansas City, Kansas 66103

Dillis L. Hart, M.D.  
5104 E. 21st  
Wichita, Kansas 67208

James N. Glenn, M.D.  
K.U. Medical Center  
Kansas City, Kansas 66103

Frank J. Jones, D.O.  
923 Central  
Kansas City, Kansas 66101

Charles R. McReynolds,  
M.D.  
9321 W. Central, Apt. 1  
Wichita, Kansas 67212

W. Tom Meredith, M.D.  
3244 E. Douglas  
Wichita, Kansas 67208

Earl B. Myers, Jr., M.D.  
113 S. 8th  
Independence, Kansas  
67301

Harry B. Neis, M.D.  
P.O. Box 738  
Parsons, Kansas  
67357

Robert P. Quackenbush,  
M.D.  
St. John  
Kansas 67576

Leland C. Reitz, M.D.  
1133 College Ave.  
Manhattan, Kansas 66502

Herman Solomon, M.D.  
1010 Brown Building  
Wichita, Kansas 67202

Lowell W. Wilder, M.D.  
3333 E. Central, Suite 1  
Wichita, Kansas 67208

### *Scientific Program*

*on*

### THE ECONOMIC ENVIRONMENT OF MEDICAL CARE —CHANGE AND CHALLENGE

**Tuesday, May 11**

**Annual Meeting  
of the**

**Kansas Medical Society**

**May 9-12, 1971**

**Ramada Inn, Downtown Topeka**

# Medical-Legal Page

## Suit for Pregnancy After Sterilization Operation

In a suit against a physician for negligent performance of a sterilization operation, the statute of limitations does not begin to run until the date of discovery of pregnancy, the highest court of Kentucky ruled.

The physician performed a sterilization operation in September, 1966. The woman became pregnant in November, 1967, and her pregnancy was discovered in January, 1968. The child was born the following August.

A lawsuit against the physician was filed in November, 1968, charging negligence in performing the operation. The woman and her husband sought damages for the resultant medical expenses, loss of consortium, and expenses incident to raising the child to majority.

Dismissing the lawsuit, the trial court ruled that the action was barred by the one-year statute of limitations.

On appeal, the court reversed the judgment of the trial court, holding that the cause of action did not accrue until discovery of the pregnancy.—*Tomlinson v. Siehl*, 459 S.W.2d 166 (Ky.Ct. of App., June 5, 1970; rehearing denied, Nov. 27, 1970)

## Standard of Care for Specialists

The standard of care for a specialist is not governed by geographic conditions but is that of the reasonable practice of medicine in the light of present-day scientific knowledge, the highest court of Michigan ruled.

In an action against two pediatricians for alleged

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malpractice in failure to timely diagnose PKU, the trial court granted the pediatricians' motion for judgment notwithstanding the verdict. Overturning the jury verdict of \$80,000, the trial court held that two of the expert witnesses who testified against the pediatricians were incompetent to testify regarding standards of care of physicians in the locality in question.

One of the witnesses was a world-renowned expert on PKU. He testified that, at the time in question, medicines and dietary programs were available to treat the child. He said that tests for the condition were routinely performed in hospitals across the nation as part of a mental retardation work up. He further said that it was the established standard for a board-certified pediatrician to perform the tests.

Another recognized expert on PKU testified as to the standard of care in communities similar to that in which the pediatricians practiced. He also testified that a test for PKU should have been done in evaluating a mentally retarded child.

Three physicians testified for the pediatricians. They said that it was not common practice for pediatricians in that area to test for PKU at the time in question because the disease was so rare. They admitted that most pediatricians knew of the disease and the available treatment.

On appeal, the court said that the considerations that allowed the area practice to set the standard for general practitioners were not relevant to a metropolitan specialist. A physician specializes in order to keep abreast of modern scientific developments. Any other standard would negate the purpose of a specialty, the court said. Reinstating the jury verdict, the court held that the expert witnesses were qualified to testify regarding the standard of practice of pediatricians.—*Naccarato v. Grob*, 180 N.W.2d 788 (Mich.Sup.Ct., Nov. 12, 1970)

*Editor's Note:* A prior proceeding in this case was reported in *The Citation*, Vol. 18, No. 8, p. 113.

## MOVING?

When you change your address, be sure to notify the JOURNAL, preferably one month in advance. In that way, you'll get every issue on time. Simply print your name, old address, and new address, on a postal card and send to: THE JOURNAL OF THE KANSAS MEDICAL SOCIETY, 1300 Topeka Avenue, Topeka, Kansas 66612.



# The Council

## *Report of Meeting, January 24, 1971*

A meeting of the Council was held on Sunday, January 24, 1971, at the downtown Ramada Inn, Topeka, beginning at 10:00 a.m. Present were Dr. Francis T. Collins, President; Drs. T. P. Butcher, C. C. Conard, H. F. Coulter, G. W. Fields, C. L. Francisco, K. L. Graham, R. H. Greer, R. W. Hughes, M. R. Knapp, C. M. Lessenden, Jr., J. J. Marchbanks, W. E. McAllaster, S. C. McCrae, R. R. Melton, J. C. Mitchell, G. L. Mowry, W. J. Reals, W. G. Rinehart, E. T. Siler, T. F. Taylor, W. O. Wallace, and F. P. Wolff.

Also present were Drs. H. T. Gray, C. C. Gunter, J. A. McClure, L. S. Nelson, E. J. Ryan, C. R. Svoboda, N. V. Treger, J. D. Walker, and R. W. Brown, director of RMP. Also present were second-year medical students: Lou Forster, Larry McDonald and Scott Ryan; Mr. Herman Skelton, Kansas Blue Shield; Mr. Gary Rexford, Executive Secretary, Shawnee County Medical Society; Mr. Swede Swenson and Mr. Oliver E. Ebel.

Following is a summary of the actions taken by the Council. The complete minutes are on file in the Executive Office.

Dr. Collins read a letter from Dr. William Roy, resigning as vice speaker of the House of Delegates and as chairman of the Commission for Education. He then announced the appointment of Dr. A. A. Fink, Topeka, as chairman of the Commission, and stated that the House will select a Vice Speaker at the time of the annual session.

The following resolution was adopted:

### **AMA-ERF Contributions Credited to Woman's Auxiliary**

WHEREAS, Physicians are encouraged to contribute through AMA-ERF to the medical school of their selection; and

WHEREAS, the Woman's Auxiliary to the Kansas Medical Society has regularly made significant contributions to AMA-ERF; and

WHEREAS, This is a major project of the Auxiliary, both in Kansas and nationally; and

WHEREAS, A number of states have requested all AMA-ERF contributions that are given from the state to whatever school may be selected to be credited to the Woman's Auxiliary of that state; therefore, be it

*Resolved*, That the Council in session on Sunday, January 24, 1971, recommends to the American Medical Association that all AMA-ERF contributions

from Kansas, whether given by individuals or organizations within this state and whether designated for the University of Kansas School of Medicine or some other medical school, be credited to the Woman's Auxiliary to the Kansas Medical Society.

The charters for Chautauqua, Elk, Montgomery, Neosho and Wilson counties were revoked, as requested by the county societies, and a new charter issued to the Southeast Kansas Medical Society, comprising Elk, Montgomery, Neosho, Chautauqua, and Wilson counties.

Dr. Ivan E. Rhodes, Wichita, was elected to fill the vacancy on the Blue Cross Board.

Dr. Collins reminded the Council of the importance of selecting a Medical Services Advisory Committee in each Council district. In those districts where committees have not yet been named, the councilors will serve as chairmen of the district committee. He reminded them that in addition to working with insurance companies, they would also serve as the Area Peer Review Committee.

The thirteen points giving the KU Package Plan, tentatively endorsed by the Committee on Medical Education, were discussed. The motion was then made and seconded that the Executive Committee be made responsible for the Society action relating to the package plan.

The motion to print the By-Laws in loose-leaf form for distribution to the annual session of the House of Delegates in May was adopted.

The motion was adopted that the Society continue to request those members who have not paid their building fund dues to do so, and to wait until May before action is taken against those who have not paid.

Dr. Collins told the Council he had received word that some ophthalmologists in other states challenged the degree of cooperation existing in Kansas between ophthalmology and optometry and had submitted to the AMA Judicial Council a challenge that Kansas ophthalmologists were unethical. He stated a letter from the AMA invited Kansas to defend itself before the Judicial Council in a meeting at New York City, March 20-21. The motion was made, seconded and adopted that this question be placed before the Kansas Section on Ophthalmology and that the Kansas Medical Society would endorse whatever action this section determined to take.

Dr. Collins stated that Resolution 70-58, relating

to services provided under Blue Shield by non-participating physicians had been adopted by the House of Delegates and referred to the Committee on Blue Shield Study. This committee has conducted a survey to establish Society opinion on this subject. After discussion, the following resolution, presented by the committee, was adopted.

### **Reimbursement for Services Provided by Non-Participating Physicians**

WHEREAS, Resolution 70-58, adopted by the House of Delegates, directs the Commission for Sociology and Economics to recommend to the Council Society policy on the subject of reimbursement for non-participating physicians in Blue Shield; and

WHEREAS, Component medical societies, having obtained the opinions of their members, report a considerable majority opinion which is supported by the Blue Shield Study Committee; therefore, be it

*Resolved*, That solely for the protection of the Blue Shield subscriber reimbursement for services rendered by a non-participating physician be based upon the same reimbursement policy as is in effect for participating physicians up to range maximums; and be it further

*Resolved*, That payment for services rendered by a non-participating physician be made directly to the patient, except in instances where the patient requests the physician to accept an assignment, under which circumstances the check shall be made payable both to the patient and to the physician; and be it further

*Resolved*, That a study be made by Blue Shield to determine the overall effect of the policy on Blue Shield participation and the cost of this policy change after a trial period of 18 months.

A special committee appointed to prepare a statement on proration presented the following resolution to the Council:

### **Proration**

*Be It Resolved*, That the Kansas Medical Society opposes proration for the following reasons:

1. Proration represents lack of planning, inability to project needs, failure to budget adequately money needed to finance the many programs and promises of welfare with no limitations on the demand of contracted services.

2. There appears to be serious lack of competency on the part of the Board of Social Welfare in spending allocated funds. Therefore, the Kansas Medical Society insists that satisfactory documentary evi-

dence be supplied by the Board of Social Welfare for proration before the Kansas Medical Society supports the Title XIX program throughout the state.

The above resolution was adopted.

The following resolution was introduced:

### **Closed Panel Capitation-Type Contract**

WHEREAS, The Kansas Blue Shield has become interested and directly involved in comprehensive, closed panel type practice, by virtue of negotiation with a group of Wichita doctors; and

WHEREAS, It is imperative that the quality of health care services in Kansas be maintained at its present high level; and

WHEREAS, Such programs can result in deterioration of health care; therefore, be it

*Resolved*, That all such programs be reviewed and approved by the appropriate local county medical society and also by the Blue Shield Study Committee of the Kansas Medical Society; and, be it further

*Resolved*, That Kansas Blue Shield not enter into negotiations on this type of contract until the prepaid plan has been sanctioned by both the county and state medical society.

The president of the Blue Shield Board stated that no action would be taken on the closed panel capitation type contract until approval was received from the component medical society. He read the following from the revised January 1971 Statement of Purpose.

GUIDING OBJECTIVES AND GOALS, SECTION III: Improve arrangements with providers toward more economical use of health resources.

GOALS: 1. Cooperate as requested, with a group of physicians in some prepaid group practice program, provided approval is given by the local medical society.

Several members of the Council stated they were not aware of this position by Blue Shield. The sponsor considered withdrawing his motion, but at the request of others it was retained and adopted.

Dr. Collins told the Council that Resolution 70-72, to establish a dispensary at the legislature had been adopted by the House of Delegates. However, he stated that the Shawnee County Medical Society learned that the legislature felt the existence of such a dispensary would create more problems than it would solve, therefore, the dispensary would not be established.





## *Personalities*—IN KANSAS MEDICINE

**Samuel C. Petrie**, Overland Park, is the new president of the Kaw Valley Heart Association. He succeeds **Kenneth A. Powell**, Leawood, who becomes chairman of the directors. Other officers include **David M. Pugh**, Mission, president-elect, and **Ralph Reed**, Lawrence, vice president. **G. Ralph Combs**, Leavenworth, was named honorary life director and presented a silver plate at the annual meeting of the association held in February.

**Thomas J. Sims, Jr.** writes that after 40 years of medical practice, he has retired and has moved from Kansas City to Siesta Key, Sarasota, Florida.

**H. O. Marsh**, chief of the orthopedic residency training program at St. Francis Hospital, Wichita, was the guest speaker at the March meeting of the Southeastern County Medical Society.

**E. J. Chaney**, Belleville, participated in a seminar on drugs presented for ministers of the Belleville area by the Tri-County Drug Action Council.

**Vernon Berkey**, Pittsburg, was the guest speaker at a six-county crusade clinic for the American Cancer Society, held in Parsons in February.

A plaque designating him an honorary member because of his "long and notable service to medicine" was presented to **Harold Brathwaite**, Kansas City, by the Wyandotte County Medical Society. **David Francisco**, president of the society, made the presentation. Dr. Brathwaite, who is 83 years old, has practiced medicine in Kansas City, Kansas, since 1914.

**Ren Whitaker**, Oberlin, was the recipient of the distinguished service award at the annual Oberlin Jaycees Awards Banquet held in February.

**Edward F. Steichen**, Lenora, has been appointed by Governor Robert Docking to a four-year term as director of the Governor's Committee on Paraguay-Kansas Partnership.

Photographs taken by former Salina physician, **Kenneth L. Druet**, were displayed at a recent art show at Branson, Missouri. Dr. Druet moved to the Ozarks area after his retirement several years ago.

In February, an honorary Doctor of Letters degree was conferred on **Kermit E. Krantz**, chairman of the department of gynecology and obstetrics at KUMC, by William Woods College, Fulton, Missouri.

**Donald Goering**, Salina, is the new president of the Central Kansas Alcoholic Foundation.

**B. Morris Hopkins**, Scott City, attended a scientific session of the American College of Cardiology in Washington, D. C., in February.

**Leo J. Scanlon, Jr.**, Halstead pathologist, spoke on the topic, "Murders in Southeast Mississippi, 1961-1970," at the Southern Homicide Conference held at the University of Mississippi School of Medicine in Jackson in March. Dr. Scanlon practiced pathology in Natchez, Mississippi, before joining the Hertzler Clinic.

**Cecil C. Hunnicutt** attended the annual meeting of the International College of Surgeons in New Orleans in February.

**Addison C. Irby**, Fort Scott, has been elected chairman of the Kansas Chapter, American Academy of Pediatrics.

# Vox Dux

Dear Editor:

I am taking this opportunity to correct a misunderstanding which occurred with the recent article entitled, "Educational Affiliation of Health Care Centers with The University of Kansas Medical Center." My name appeared as the author of the document only because the document was released for publication from the office of the Dean and, within that office, the affiliated educational programs are coordinated under me. The appearance of my name is misleading in that it implies my authorship. This was not the case. Full credit for the writing of the document goes to an ad hoc committee of the medical school under the chairmanship of Dr. Mahlon Delp. The full committee is listed correctly at the end of the article.

May I take this opportunity to compliment you and the staff of the JOURNAL OF THE KANSAS MEDICAL SOCIETY for the excellence which is always exemplified by your publication. I particularly wish to thank you for the annual issue which is dedicated to the Medical School. I note that this issue of March 1971 marked the silver anniversary of this event.

JACK D. WALKER, M.D.  
Associate Dean, KUMC

## KMS Education—Information

### Activity Report, February 15-March 15

The clipping service continues to indicate good release usage by the state daily and weekly newspapers, and legislative comment on releases is also gratifying.

During the past 30 days a release concerning Senate Bill 91 (a proposal dealing with the establishment of methadone treatment centers) was prepared and distributed to the print, electronic media and the legislature.

The *Wichita Beacon* contacted Parkinson and Associates for more information on a release forwarded February 13 concerning a program administered by the Kansas Academy of General Practice designed to show students the advantages of family practice. The *Beacon* proposes to do an in-depth story—and possibly a series—on this program.

The agency is currently working on stories indicating the extent of the venereal disease problem in Kansas, peer review activities, pre-convention publicity and a feature on how welfare patients should seek medical care.

We are also working on filler material to be forwarded to the dailies and weeklies in the next 30 days.

The Kansas Association of Radio Broadcasters, once again, went beyond the call of duty in cooperating with KMS on a public service program of alert-

ing the Kansas radio audience to various messages of interest. The following is a breakdown of stations who participated in the last flight of spots, which resulted in 1,303 exposures for the KMS:

#### KARB NON-COMMERCIAL SUSTAINING ANNOUNCEMENT PLAN

Call Letters	Community	Call Letters	Community
KABI	Abilene	KSOK	Arkansas City
KGGF	Coffeyville	KGNO	Dodge City
KVOE	Emporia	KMDO	Fort Scott
KIUL	Garden City	KUPK	Garden City
KLOE	Goodland	KWBW	Hutchinson
KANS	Larned	KLWN	Lawrence
KSCB	Liberal	KMAN	Manhattan
KNEX	McPherson	KNBI	Norton
KOFO	Ottawa	KKAN	Phillipsburg
KINA	Salina	WIBW	Topeka
WREN	Topeka	KLEY	Wellington
KAKE	Wichita	KFDI	Wichita
KNIC	Winfield	KFH	Wichita
KMUW	Wichita	KANU	Lawrence
WIBW-FM	Topeka		

Total Stations 29  
Total Spots 1,303



# Woman's Auxiliary

Have any of you looked up from your evening paper to see your wife intently cutting bread wrappers into long strips, or knitting furiously on something with an incredible number of colors that she insists is a bedroom slipper? She hasn't lost her marbles. She is merely "doing something with nothing" for an International Health project.

It's an accepted fact that most doctors' wives are experts at doing something with nothing, having had much experience at it during medical school, internship or early practice days when the bacon was cut pretty thin. And anyhow, look at what we've managed to do with all of you! You have to admit you're a pretty good looking and capable bunch of men, and we'd like to think we get a part of the credit, anyhow.

But back to International Health activities and how it all started in Kansas, and what some of the medical society and auxiliary members have done about it. The International Health Activities committee for the Kansas auxiliary was established in 1963 under the chairmanship of Mrs. John B. Jarrott, Hutchinson. The original appeal from the national auxiliary was to find drug samples to send to the Direct Relief Foundation and World Medical Relief. Agencies at that time who wanted other medical supplies were the Catholic Medical Mission Board, the Christian Medical Society and the Leprosy Relief Foundation. There was also an appeal for medical texts and journals.

Kansas' first effort was toward drug samples and many were collected. But the auxiliaries found that shipping costs were prohibitive and most auxiliaries have no money-making projects other than those for AMA-ERF. So they became discouraged. However, about that time it was discovered that the Jaycees had a program similar to ours. Their efforts were going to a clinic in Hong Kong to a doctor named Jim Turpin who was not so well known then as he is now. As it turned out, the Jaycees had the means for shipping supplies through their members, but had no drugs or supplies to ship.

Kansas auxiliaries leaped to the challenge and collected barrels and barrels of drugs. But there was yet another hurdle. The procedure had to be cleared with local, state and national medical societies and with the Federal Drug Administration. With their consent and direction we were allowed to collect and ship drug samples. First of all, the drugs had to be carefully graded by competent workers to eliminate certain ones and to throw away outdated drugs. All drugs had to be in unopened packages with directions intact. They had to be packed according to

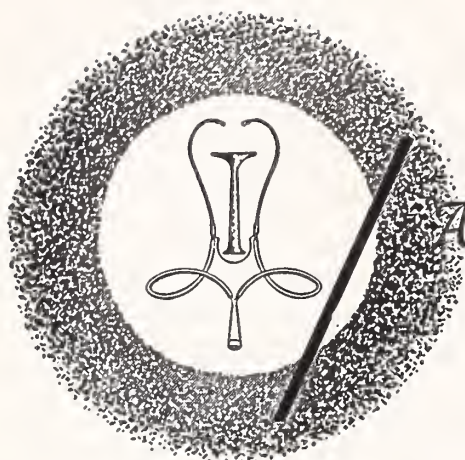
specification, then stored in a locked room under the supervision of someone licensed to handle drugs (pharmacist, drug store, a physician's home, hospital, etc.) and given in sealed packages to the transport company.

Again the women rose to the challenge and started collecting and packing. Wichita and Hutchinson both sent around 900 pounds of supplies the first year. And it went from there. Gradually the women added other things . . . "Johnny coats" (short gowns made from old white shirts), knit leper bandages, small dolls made from old nylon stockings, floor mats and hand exercise balls from crocheted bread wrappers, knitted slippers from yarn scraps, hygiene kits, layettes, blankets, old eyeglasses, plastic syringes, comforters made from cotton squares filled with nylon stockings . . . you name it, those women collected it or made it.

Last year 9,000 pounds of goods went to World Medical Relief, 12,500 pounds of soap to Project Concern, 2,000 pairs of eyeglasses to the Medical Service Bureau and 600 to India, a box of medicines to Ecuador and \$513 in cash divided between several agencies from money made in collecting coupons. This year's report of the total amount of drugs and supplies isn't available yet, but there is no doubt that it will be considerable. Most of the supplies are sent to World Medical Relief and Project Concern because transportation is available for these areas. The auxiliary doesn't collect as many drugs as formerly, since the demand for them isn't as great with the agencies getting large supplies from the drug companies. However, a few are still shipped here and there as requested.

A recent newsletter from the Wichita Project Concern group tells us that 1,116 leper bandages, 296 hygiene kits, 734 pairs of knitted slippers, 213 comforters, 1,230 exercise balls, 799 dresses, 687 Johnny coats and 91 layettes have come to their headquarters during 1970. In ten months' time 206 barrels weighing 18,695 pounds were sent to Project Concern and 62 barrels weighing 5,605 pounds were sent to World Medical Relief. And that's not so bad. All of this wasn't done by the auxiliary of course, but six Kansas auxiliaries helped to get it together along with church and club groups. A lot of the credit goes to Mrs. Wilbur Cauble, Wichita, the chairman from 1965-69 and 1970-71, and Mrs. Jack Cooper, Prairie Village, the 1969-70 chairman. And you might say we started it, so in a way we feel just a little responsible.

*(Continued on page 224)*



## Announcements

*Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's CALENDAR. Notice of the session is posted in advance to allow the physician time to make preparations.*

### APRIL

- Apr. 17 2nd annual Arthur E. Hertzler Memorial Lecture, Halstead, Kansas. Recent Advances in Cardiovascular Diseases. Lecturers: William Likoff, M.D., Philadelphia; Alfred Soffer, M.D., Chicago; Robert P. Hudson, M.D., Kansas City; Wilford D. Hooper, M.D., Halstead; and Charles Pokorny, M.D., Halstead.
- Apr. 19-21 Annual spring session, American Academy of Pediatrics, Chase-Park Plaza Hotel, St. Louis. For information write American Academy of Pediatrics, 1801 Hinman Ave., Evanston, Illinois 60204.
- Apr. 19-22 23rd annual meeting, Southwestern Surgical Congress, Caesar's Palace Hotel, Las Vegas. For information write Jack A. Barney, M.D., Southwestern Surgical Congress, 301 Pasteur Building, Oklahoma City 73103.
- Apr. 23-24 28th annual meeting, American Geriatrics Society, Ambassador Hotel, Chicago. Write: Edward Henderson, M.D., Exec. Dir., American Geriatrics Society, 10 Columbus Circle, New York, New York 10019.
- Apr. 30-  
Mar. 20 Spring postgraduate medical seminar cruise to the Mediterranean, sponsored by the Department of Postgraduate Medicine, Albany Medical College. For information write William P. Nelson, III, M.D., Department of Postgraduate Medicine, Albany Medical College, Albany, New York 12208.

### MAY

- May 3-6 19th annual clinical meeting, American College of Obstetricians and Gynecologists, San Francisco. Postgraduate courses precede the meeting on May 1 and 2. Write: Donald F. Richardson, 79 W. Monroe St., Chicago 60603.

- May 9-12 112th annual meeting, Kansas Medical Society, Ramada Inn Downtown, Topeka. Write: Kansas Medical Society, 1300 Topeka Ave., Topeka 66612.
- May 17-19 National Conference on Breast Cancer, sponsored by the American Cancer Society, Century Plaza Hotel, Los Angeles. Write: Esther Kelley, Professional Education, ACS, Inc., 219 E. 42nd St., New York, New York 10017.
- May 21 *Children and Animals*, ninth annual pediatric seminar, Baptist Memorial Hospital, Kansas City, Missouri. Write: Medical Staff Office, Baptist Memorial Hospital, 6601 Rockhill Road, Kansas City, Missouri 64131.

### POSTGRADUATE EDUCATION

#### University of Kansas:

- Apr. 29-30 *Nursing Assessment—and Then What?*
- May 3-4 *Coronary Artery Disease—Medical and Surgical Management*
- May 6-7 *Inhalation Therapy*
- May 15 *Infectious Diseases* (15th annual symposium).

For further information write the Department of Postgraduate Medical Education, University of Kansas School of Medicine, Rainbow Boulevard at 39th Street, Kansas City, Kansas 66103.

#### University of Colorado:

- Apr. 29-May 1 *Dermatology in General Practice (limited)*
- June 21-26 *General Practice Review* (Estes Park).

For further information write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 East Ninth Avenue, Denver 80220.



KANSAS STATE DEPARTMENT OF HEALTH  
TOPEKA, KANSAS

Epidemiology & Disease Control Services—Registration & Health Statistics Services—  
Kansas Morbidity Incidence  
Summary of Cases Reported in January, 1971 and 1970

<i>Diseases</i>	<i>1971 January</i>	<i>1970 January</i>	<i>January, 5-Year Median, 1967-1971</i>
Amebiasis .....	2	—	1
Aseptic meningitis .....	—	—	—
Brucellosis .....	—	—	—
Diphtheria .....	—	—	—
Encephalitis, prim., infect. ....	—	—	—
Encephalitis, post-infect. ....	—	—	—
Gonorrhea .....	772	655	375
Hepatitis, infectious .....	43	30	27
Measles (Rubeola) .....	4	1	*
Meningococcal meningitis .....	8	—	2
Mumps .....	7	4	*
Pertussis .....	—	—	—
Poliomyelitis .....	—	—	—
Rheumatic fever .....	—	—	—
Rubella (German Measles) .....	4	2	*
Salmonellosis .....	10	7	10
Scarlet Fever .....	10	37	11
Shigellosis .....	48	2	2
Streptococcal infections .....	70	122	255
Syphilis .....	138	118	118
Tinea capitis .....	3	4	5
Tuberculosis .....	10	12	12
Tularemia .....	—	—	—
Typhoid fever .....	—	—	—

\* Statistics not available for five-year median.

### TRICHINOSIS DECLINES IN MAN AND SWINE

There is increasing evidence that trichinosis is decreasing markedly as a public health problem in the United States. For example, investigators reported a prevalence of 16.1 per cent from 5,313 human diaphragms examined during 1936-1941. Others reported a prevalence of only 4.2 per cent for 5,000 human diaphragms examined during 1966-1968.

Similar sharp reduction in trichinosis has also been found in swine. The prevalence in farm-raised (primarily grain-fed) swine decreased from 0.95 per cent in the 1930's to only 0.12 per cent in butcher weight and 0.22 per cent in breeder swine during 1961-1965. The prevalence in garbage-fed swine decreased from 11.0 per cent in 1950 to only 0.5 per cent in 1964-1966.

Similar declines have been noticed in Iowa in the

prevalence of the parasite. During 1936-1941, the prevalence was 16.2 per cent in human beings in Iowa. The prevalence was down to 2.8 per cent in man during 1961-1965. Prevalence was 0.17 per cent in Iowa swine examined during 1953-1957, whereas in various studies since 1961 only one (0.017 per cent) infected Iowa hog was found in 6,000.

A study on the prevalence of *Trichinella spiralis* in pork sausage reveals further evidence that the problem is decreasing. In 25 years, the prevalence of trichinae in fresh bulk sausage commercially available in Ames, Iowa, had decreased from a rate of one positive sample for each eight examined (12.5 per cent) during 1944-1946 to only one trichina-containing sample for each 635 samples examined (0.16 per cent) during 1965-1969. This decline has been continuous as indicated by the rates obtained for the intervening periods.

A similar downward trend has been noticed for fresh link sausage. The prevalence rate decreased from one positive per nine samples examined (11.7 per cent) in 1944-1946 to one per 202 samples (0.5 per cent) during 1965-1969. The declining prevalences of trichinae in Iowa swine and sausage products are especially significant since nearly one-fourth of the U. S. swine are raised in Iowa.

W. J. Zimmerman, Public Health Report (August, 1970):722.

*Reported Human Trichinosis Cases, Kansas*

1963-1970

1963—1  
1964—0  
1965—0  
1966—1  
1967—2  
1968—0  
1969—0  
1970—1

## Along the Bookshelf

### *Clendening Medical Library*

#### RECENT ACQUISITIONS

- Brown, Henry. Hepatic failure. Springfield, Illinois, Thomas, 1970.
- Fast, Julius. Body language. New York, Evans, 1970.
- Friedberg, Charles Kaye. Congestive heart failure. New York, Grune & Stratton, 1970.
- Friedman, Henry Harold. Diagnostic electrocardiography and vectorcardiography. New York, McGraw-Hill, 1971.
- Furman, Seymour. Principles and techniques of cardiac pacing. New York, Medical Dept., Harper & Row, 1970.
- Gershon-Cohen, Jacob. Atlas of mammography. New York, Springer, 1970.
- Goodman, Richard M. The face in genetic disorders. St. Louis, Mosby, 1970.
- Iowa University. University Hospitals. Dept. of Nutrition. Recent advances in therapeutic diets. Ames, Iowa State University Press, 1970.
- Kraus, Hans. Clinical treatment of back and neck pain. New York, McGraw-Hill, 1970.

- Levine, Milton Isra. Your overweight child. New York, World Publishing Company, 1970.
- Lewis, Edwin C. The psychology of counseling. New York, Holt, Rinehart and Winston, 1970.
- Long, Nicholas James. Conflict and comfort in college: mental health of the collegiate. Belmont, California, Wadsworth Publishing Company, 1970.
- Lyons, Catherine. Organ transplants; the moral issues. Philadelphia, Westminster Press, 1970.
- MacMahon, Brian. Epidemiology; principles and methods. Boston, Little, Brown, 1970.
- Martin, Lealon E. Mental health/mental illness: revolution in progress. New York, McGraw-Hill, 1970.
- Miller, Alfred Louis. A practical guide on hearing impaired children; helpful, practical information for speech and hearing therapists, audiologists, physicians, and nurses. Springfield, Illinois, Thomas, 1970.
- Nolen, William A. The making of a surgeon. New York, Random House, 1970.
- Plumer, Ada Lawrence. Principles and practice of intravenous therapy. Boston, Little, Brown, 1970.
- Robbins, Lewis C. How to practice prospective medicine. Indianapolis, Methodist Hospital of Indiana, 1970.
- Schreiber, Melvyn H. Indications and alternatives in x-ray diagnosis. Springfield, Illinois, Thomas, 1970.
- Silverman, Samuel. Psychologic clues in forecasting physical illness. New York, Appleton-Century-Crofts, 1970.
- Tunnadine, L. P. D. Contraception and sexual life; a therapeutic approach. Philadelphia, Lippincott, 1970.

### Auxiliary Annie

*(Continued from page 221)*

Well, back to my knittin'. See you at convention in Topeka.

Auxiliary Annie

By the way, it sure would be nice if you would not only bring your wife to convention in Topeka, but urge her to join the auxiliary if she hasn't. We have lots of fun as well as putting out a fair amount of work. So sort of push her our way, will you? We'd appreciate it.—Annie





**CHARLES C. DENNIE, M.D.**

Dr. Charles C. Dennie, 87, Mission Hills, died January 13, 1971, at St. Luke's Hospital in Kansas City, Missouri.

Dr. Dennie was born at Excelsior Springs, Missouri, on October 23, 1883. He was graduated from Baker University, Baldwin, and received his medical degree from the University of Kansas School of Medicine in 1912. He did postgraduate studies at the Massachusetts General Hospital, Boston, and the Hospital St. Louis, Paris. He served as an instructor at the Harvard Medical School, Boston. He was professor emeritus of dermatology at the University of Kansas Medical Center.

**GEORGE J. GOODSHELLER, M.D.**

Dr. George J. Goodsheller, Marion, died at St. Luke's Hospital in Marion on January 12, 1971. He was 94 years old.

Dr. Goodsheller was born April 23, 1876, near McPherson. He was graduated in 1904 from Hahnemann Medical College in Chicago. After practicing for several years in Ord and Lincoln, Nebraska, he came to Marion in 1911, and continued his practice there until his retirement in 1963.

Mrs. Goodsheller survives her husband.

**ARTHUR E. O'DONNELL, M.D.**

Dr. Arthur E. O'Donnell, 93, Junction City, died February 12, 1971, at the Geary Community Hospital.

Born in Ireland, Dr. O'Donnell came to Kansas with his family in 1884 and settled on a farm near Geneseo, later moving to Wilson. He received his degree in medicine in 1900 from Kansas City Medical School. He began his medical practice in Wilson, moving to Junction City in 1917. He retired from practice in 1968.

Surviving are two sons and a daughter.

A memorial has been established with the Geary Community Hospital, Junction City, Kansas.

**JOHN G. SWAILS, M.D.**

Dr. John G. Swails, M.D., 80, long-time Wathena physician, died February 13, 1971, at a hospital in St. Joseph, Missouri.

Dr. Swails was born May 6, 1890, at Clarksdale, Missouri. He was graduated from Ensworth Medical College, St. Joseph, Missouri, in 1911. He began his medical career at Grafton, Nebraska, and moved to Wathena in 1915. He was in active practice there until a very short time ago.

Survivors include his wife and two sons.

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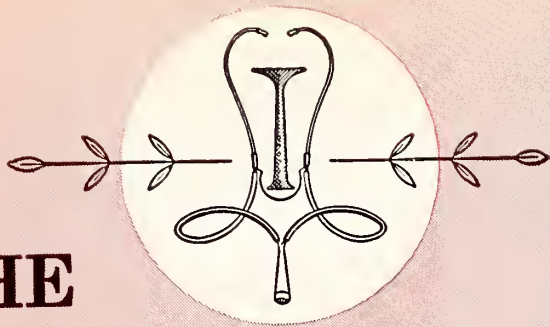
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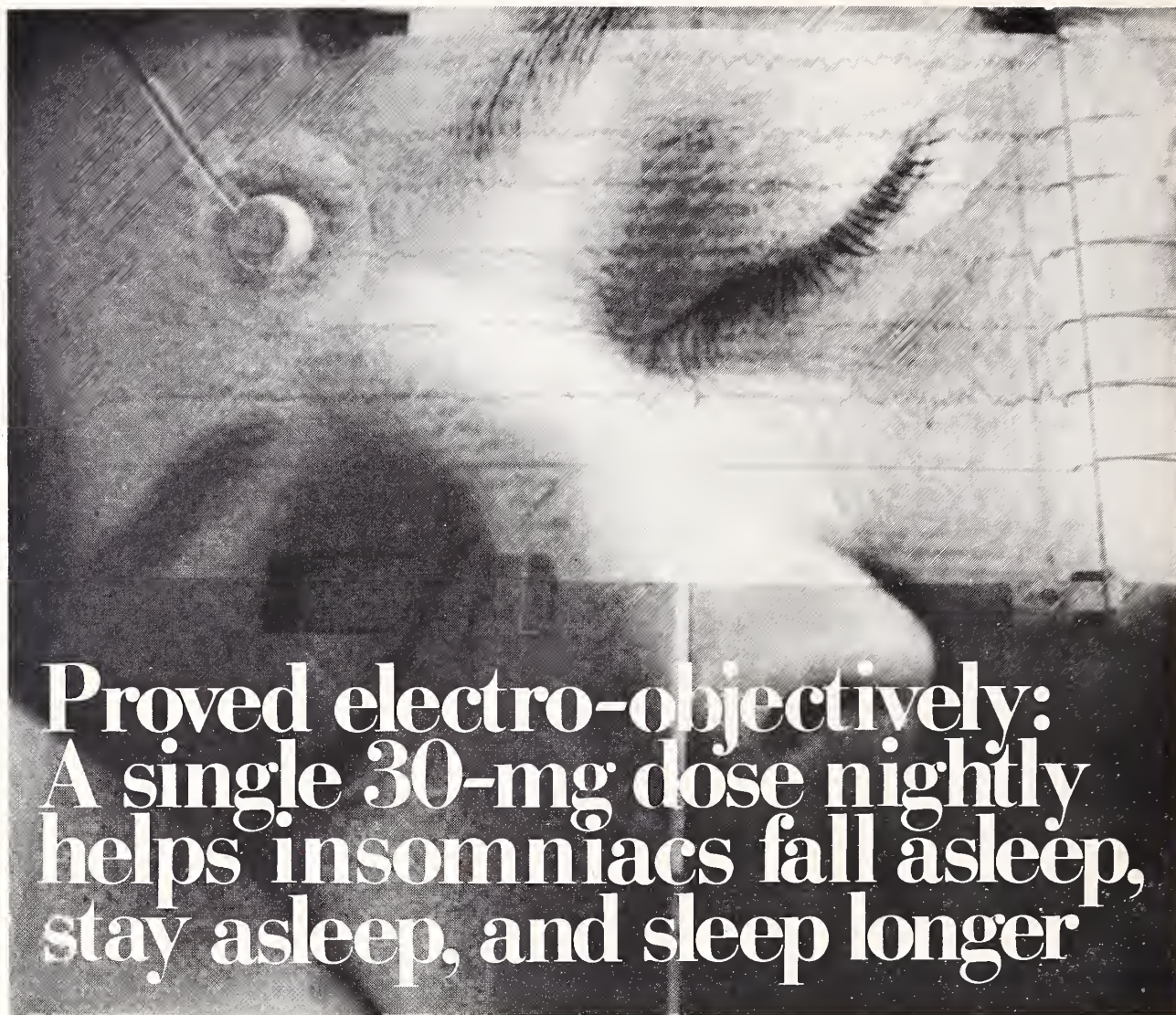
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NO. V







# Proved electro-objectively: A single 30-mg dose nightly helps insomniacs fall asleep, stay asleep, and sleep longer

Controlled studies of 23 insomniac and 13 normal subjects treated with Dalmane (flurazepam HCl) in five sleep laboratories generated over 4000 hours of electroencephalographic, electro-oculographic and electromyographic tracings. These studies revealed that Dalmane 30 mg nightly usually induces sleep in 22 minutes and provides seven to eight hours of sleep.<sup>1,2,3</sup>

Moreover, Dalmane 30 mg was found to be useful in all common types of insomnia in which it was studied. Of drugs studied in a sleep laboratory,<sup>1</sup> Dalmane 30 mg was the only one that consistently reduced sleep induction time and maintained sleep nightly for 14 consecutive nights of use.

---

## Confirmed clinically

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Fifty-three controlled studies using a paired-night, double-blind crossover design have evaluated Dalmane clinically. In the majority of these, Dalmane (flurazepam HCl) significantly reduced sleep induction time and increased sleep duration. Dalmane and a placebo were alternated on successive nights in 2010 insomniacs, 1706 of whom were studied for a single night-pair, and the remainder for as many as fifteen paired-nights. A patient preference for Dalmane was apparent in the paired-night studies.

Dalmane was also preferred to certain hypnotics in two separate preference studies. In each of two double-blind studies, Dalmane 30 mg retained effectiveness for the total period of seven consecutive treatment nights, according to subjective/objective evaluations.

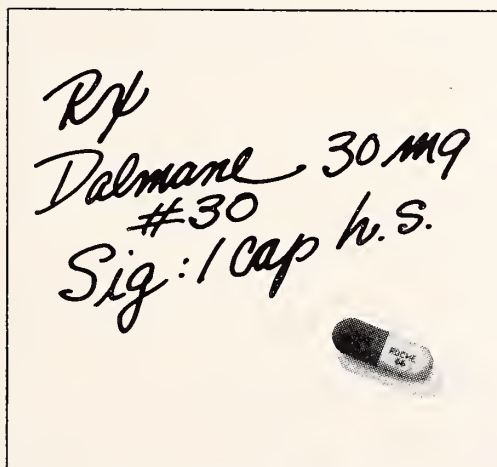


In summary, Dalmane is useful in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening. It can be used effectively in patients with recurring insomnia or poor sleeping habits, and in acute or chronic medical situations requiring restful sleep.

## Dalmane (flurazepam HCl) is generally well tolerated

In most instances in which adverse effects with Dalmane were reported, they were mild, infrequent and seldom required discontinuation of the drug. Dizziness, drowsiness, lightheadedness and the like were the side effects most frequently noted, particularly in elderly or debilitated patients.<sup>3</sup> Instances of hepatic dysfunction, paradoxical reactions (excitement) and hypotension are rare with Dalmane, and morning hang-over is relatively infrequent. In studies to date the effectiveness of Dalmane for recommended periods of use is maintained without need to increase dosage.

**References:** 1. Kales, A., et al.: "Effectiveness of Sleep Medications: All-Night EEG Studies of Hypnotic Drugs," in Proc. 7th Internat. Cong. Electroencephal. and Clin. Neurophysiol., San Diego, Calif., Sept. 13-19, 1969. 2. Kales, A., et al.: "Psychophysiological and Biochemical Changes Following Use and Withdrawal of Hypnotics," in Kales, A. (ed): *Sleep: Physiology and Pathology*, Phila., Lippincott, 1969, p. 331. 3. Data on file, Medical Department, Hoffmann-La Roche Inc.



For the sleep your patients need

New **Dalmane**<sup>®</sup>  
(flurazepam hydrochloride)

**Before prescribing, please consult Complete Product Information, a summary of which follows:**

**Indications:** Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; and in acute or chronic medical situations requiring restful sleep. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended.

**Contraindications:** Known hypersensitivity to flurazepam HCl.

**Warnings:** Caution patients about possible combined effects with alcohol and other CNS depressants. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Use in women who are or may become pregnant only when potential benefits have been weighed against possible hazards. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage.

**Precautions:** In elderly and debilitated, initial dosage should be limited to 15 mg to preclude oversedation, dizziness and/or ataxia. If combined with other drugs having hypnotic or CNS-depressant effects, consider potential additive effects. Employ usual precautions in patients who are severely depressed, or with latent depression or suicidal tendencies. Periodic blood counts and liver and kidney function tests are advised during repeated therapy. Observe usual precautions in presence of impaired renal or hepatic function.

**Adverse Reactions:** Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported were headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations and elevated SGOT, SGPT, total and direct bilirubins and alkaline phosphatase. Paradoxical reactions, e.g., excitement, stimulation and hyperactivity, have also been reported in rare instances.



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# The JOURNAL of the KANSAS MEDICAL SOCIETY

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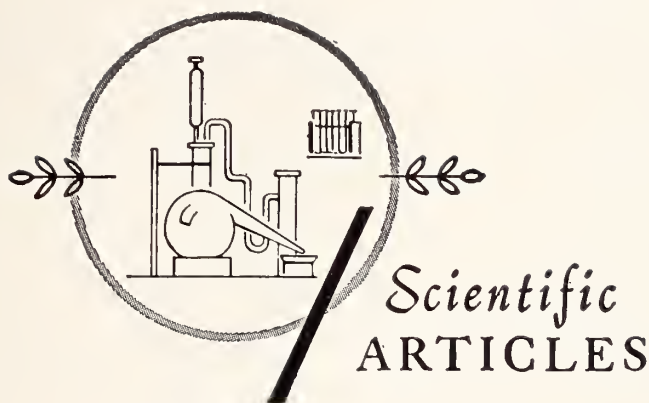
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# The Hepatitis Story

## *Search for a Cause*

ABBAS M. BEHBEHANI, Ph.D.,\* *Kansas City, Kansas*

### Introduction

THE ETIOLOGIC AGENTS of almost all infectious diseases of man believed to be caused by viruses have been isolated and characterized in the laboratory. Two notable exceptions are two diseases of the liver with very similar clinical and pathological features which are generally referred to as infectious hepatitis (IH) and serum hepatitis (SH). The first has also been called epidemic jaundice, viral hepatitis A and short-incubation or MS-1 hepatitis and the second homologous serum jaundice, viral hepatitis B and long-incubation or MS-2 hepatitis. The main variations in different features of these two diseases are presented in Table 1.

While IH, formerly recognized as epidemic jaundice, has been known, especially among military personnel (Jaundice of campaigns), for centuries, SH has become prominent in recent years as a result of the increased use of human blood and certain blood products as well as the frequency of various parenteral injections. IH was frequently confused with Weil's disease (leptospirosis) until the latter was differentiated by serologic tests in the 1880's. In the United States a new concept of the pathogenicity of IH appeared during the 1940's as it was realized that the clinical syndrome was a manifestation of necrotic lesions in the hepatic parenchyma rather than an ob-

struction of the common bile duct by a mucous plug.

### The Viral Etiology

A viral etiology and the existence of two distinct diseases was advanced by the Swedish physician Flaum and his associates who in 1926 reported an epidemic of jaundice among a group of patients treated at a diabetic clinic. These workers recognized the role of contaminated needles and syringes in the transmission of two different forms of jaundice, namely, one with a short incubation period and the other with a long one that could possibly be caused by two different viruses. The viral etiology, based mainly on excluding bacteria, received substantial evidence during the 1930's and 1940's when, firstly, many cases of hepatitis developed in persons receiving yellow fever vaccine containing human serum; secondly, IH was transmitted to a volunteer by feeding duodenal contents from a patient with the same disease, and, thirdly, the detection of the infectious agent in the blood and feces, its filterability and serial transmissibility in humans.<sup>1</sup>

During the 1950's, following the establishment of a viral etiology (or rather the exclusion of all other known forms of microorganisms) and the recognition of two disease entities, attempts to isolate and characterize the causative viruses in the laboratory were made by various workers in different parts of the world. Experiments involving human volunteers es-

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TABLE 1  
VARIATIONS IN DIFFERENT FEATURES OF INFECTIOUS HEPATITIS AND SERUM HEPATITIS

<i>Feature</i>	<i>Infectious Hepatitis</i>	<i>Serum Hepatitis</i>
Route of infection	Mainly fecal-oral but also parenteral	Mainly parenteral but also fecal-oral
Seasonal incidence	Fall and winter	All year
Age distribution	Children and young adults	All ages
Clinical features:		
Onset	Usually abrupt	Usually slow and insidious
Admission to hospital	Early in the disease	Later in the disease
Anorexia	Present	Usually absent
Abdominal pain	Infrequent	Frequently appearing after 1 to 2 weeks
Ambulation	Usually non-ambulant	Usually ambulant
Arthralgia	Usually insignificant or absent	Manifested as early as 3-4 weeks before the onset of jaundice in small joints, particularly severe at nights
Ratio of icteric to anicteric	About 1:1 in adults About 1:12 in children	About 1:100
Fever (>38°C)	Common	Less common
Mortality rate	0.1 to 0.3 per cent in young adults, higher in older individuals especially in women after menopause	Up to 1 per cent
Duration of infectivity and carrier state	Blood: for days Feces: for weeks to months	Blood: for months to years Feces: undetermined
Prophylactic value of gamma globulin	Good	Variable results
Diagnostic biochemical and serological tests:		
SGOT	Spiking rise and short duration of elevated activity (1-3 weeks)	Gradual rise and long duration (up to 3 months)
Thymol turbidity	Consistently abnormal	Relatively normal
IgM	High increase 3-4 days before abnormal SGOT, return to normal 5-35 days later	Slight increase during acute stage
Au antigen	Detected in sera of about 40 per cent of patients (see text)	Detected in sera of up to 98 per cent of patients (see text)

tablished certain physiochemical properties of IH and SH viruses. IH virus is resistant to heating at 56 C for 30 minutes, low pH, ether and common chemical disinfectants. However, it is destroyed by autoclaving (121 C for 15-20 minutes), boiling in water for 15 minutes or dry heat sterilization (180 C for one hour). SH virus is also resistant to heating at 60 C for 4 hours, UV irradiation, nitrogen mustard treatment, ether, low pH and common chemical disinfectants. Its size appears to be about 25 mμ by ultrafiltration procedure. Both viruses survive for years at -20 C.

In 1956, Richtsel and his associates reported the

isolation of three antigenically distinct agents (AR-17, WW-55 and MR-1) from serum and plasma of IH patients in Detroit 6 cell lines (derived from human bone marrow). The AR-17 agent, after repeated passage in cell cultures, produced clinical hepatitis in human volunteers. Attempts to prepare a prophylactic vaccine with this agent were also made. However, the above findings were not confirmed by other investigators. In a recent study when Detroit 6 cell cultures were used for the inoculation of sera from IH patients and normal controls, cytopathic effects (CPE) were observed at about the same frequency in the inoculated cultures. However, more



recently, the isolation of a cytopathic agent from the acute phase specimen of hepatitis patients in a cloned Detroit 6 cell line was reported. The above results have not yet been confirmed by other workers.

In 1961, Davis reported the isolation of a number of viruses (San Carlos agents) from the stools of American Indian children with clinical diagnosis of IH and jaundice, which were later identified as adenoviruses. The A-1 agent isolated in 1961 by O'Malley and associates from NIH plasma pool No. 6, known to contain SH virus was later identified as *Mycoplasma gallisepticum*. A small double-stranded DNA agent, designated agent Y, was also recently isolated in chimpanzee liver cells from the blood of an IH patient. Moreover, many known viruses, e.g., reoviruses, coxsackieviruses, echoviruses and myxoviruses have also been isolated from clinical specimens collected from IH and SH patients. However, none of the above agents is currently considered as the etiologic agent of either IH or SH.<sup>2</sup>

### Transmission to Subhuman Primates

Attempts to transmit the human disease to various simian primates have been more fruitful than the cell culture approach. Epidemiologic studies have indicated that subhuman primates, especially newly imported immature chimpanzees, may serve as epidemiologic carriers of human hepatitis virus. In certain outbreaks, up to 80 per cent of the personnel who had handled the infected primates developed hepatitis. Deinhardt and his associates first reported the development of hepatitis in marmoset monkeys of South America following the inoculation of acute phase serum or plasma from hepatitis patients. The infected animals showed typical biochemical abnormalities and focal inflammatory changes in the liver similar to those observed in human cases. Melnick and his associates have contended that the disease produced in marmosets represents the activation of latent marmoset hepatitis agents rather than the transmission of the human disease. However, further experiments conducted by Holmes and his associates have shown that with coded materials, those marmosets inoculated with plasma from three early acute IH patients developed hepatitis while other animals inoculated with preinfection plasmas of the same patients showed no evidence of hepatitis. More recently, Lorenz and his associates confirmed the transmission of the disease to marmosets with sera from IH patients and marmoset sera containing Deinhardt's hepatitis agent.<sup>3</sup> Bearcroft has also successfully produced hepatitis in patas monkeys of West Africa by feeding or injecting these animals with suspensions of liver from fatal human cases of IH. The disease was maintained in serial monkey-to-

monkey subpassage by both oral and intraperitoneal administration of infected monkey liver suspension.<sup>4</sup>

### The Australia Antigen

In 1961, Allison and Blumberg observed that patients receiving multiple transfusions developed antibodies against serum beta lipoproteins. These antibodies were more frequently detected in patients receiving the greater number of transfusions. Sera containing high antibody titers were then used in an agar-gel double immunodiffusion procedure, to define antigenic variations in inherited beta lipoproteins among various individuals. In 1963, Blumberg found an antigen in the serum of an Australian aborigine, containing little or no lipid, that reacted strongly with a serum from a multiply-transfused hemophiliac. He called the antigen the Australia (Au) antigen. Later the Au antigen was found in the sera of a significant percentage (in certain populations up to 20 per cent) of apparently normal persons residing in tropical areas. The antigen was also observed in patients with lepromatous leprosy, leukemia, chronic uremia and in institutionalized patients with Down's syndrome. However, in 1967 Blumberg and his associates observed that the Au antigen occurred much more consistently and with the highest prevalence rates among patients with acute viral hepatitis.<sup>5</sup> Shortly after, in 1958, Prince reported that a serum from a 24-year-old hemophiliac, who had received more than 10,000 units of blood, fresh frozen plasma and cryoprecipitate, contained an antibody that precipitated, by the immunodiffusion technique, a serum antigen found during the incubation period and the acute stage of only SH patients. He called the antigen SH antigen.<sup>6</sup> Later studies indicated that SH antibodies were also found in other multiply-transfused patients and that SH and Au antigens were identical. During the last three years, many workers have investigated the Au-SH antigen (now commonly called Au antigen) in order to elucidate its properties and its etiologic relationship to human viral hepatitis. Under the electron microscope, the Au antigen appears as a particle of about 20 m $\mu$  in diameter with knob-like subunits of 0.3 m $\mu$  on the surface. Tubular and filamentous forms are occasionally observed. It is sedimented at densities of 1.20-1.25 in CsCl and at densities of 1.16-1.18 in sucrose. Chemically, it is essentially a protein with little lipid and no nucleic acid. It is not affected by a variety of enzymes such as trypsin, lipase, ribonuclease, deoxyribonuclease, amylase and neuraminidase. Heating at 85 C (but not at 56 C) for one hour destroys its immunoreactivity. Ether treatment reduces the size of the antigen, suggesting removal of a lipid shell. It appears quite stable under freezing

temperatures. So far, no biologic activity has been demonstrated for the Au antigen.

The etiologic relationship between Au antigen and viral hepatitis is still a controversial matter. Whether it is etiologically linked with only SH or with both SH and IH is currently under intensive investigation. Prince and a number of other investigators propose that it is etiologically related to only SH. Blumberg and certain other workers propose an etiologic relationship to both SH and IH. The latest data published by Blumberg and his associates showed that Au antigen was associated with about 58 per cent of post-transfusion hepatitis (serum hepatitis) and with about 38 per cent of infectious hepatitis. Since, as established recently, both IH and SH may be transmitted by either the oral or parenteral route and the incubation periods of the two forms of hepatitis (ranges of 31-53 days for IH and 41-69 days for SH) are overlapping, any differentiation between the two diseases, based on a history of transfusion and the incubation period, is seemingly not dependable. For these reasons, Blumberg and his associates prepare to use the term viral hepatitis and indicate whether a particular case or outbreak of hepatitis is or is not associated with the Au antigen.<sup>5, 6</sup> While some data from other laboratories confirm Blumberg's results, others are at sharp variance and indicate the presence of Au antigen in only SH cases (up to 98 per cent). On the whole, the etiologic relationship between Au antigen and human viral hepatitis is based on the following observations:

1. Au antigen is rare (in about 0.1 to 0.5 per cent) in normal individuals in the United States, but occurs in up to 80 per cent of patients with acute viral hepatitis. It is not generally found in patients with other liver diseases. In the sera of professional blood donors and habitual drug abusers, however, the incidence of Au antigen may be as high as 2 per cent.

2. Fluorescent granules are detected in or on the nuclei of the liver cells of patients with Au antigen in their blood, when these cells are stained with fluorescent anti-Au antigen serum. Liver cells of patients without hepatitis or Au antigenemia, do not fluoresce with the same fluorescent antiserum.

3. Clinical hepatitis and appearance of Au antigenemia (in up to about 70 per cent) have been observed in individuals transfused with Au antigen-positive bloods.

4. Au antigen is found in about 30 per cent of the institutionalized patients suffering from Down's syndrome. In such patients, Au antigen is associated with chronic hepatitis as evidenced by liver biopsy findings and elevated SGOT activity. Moreover, the greater prevalence of Au antigen among patients with Down's syndrome in large institutions (closer contact and ease of spread), and its absence in out-

patients with the same disease, suggest an infective nature for the antigen.

5. Au antigen does not seem to be a by-product of viral hepatitis as it appears during the incubation period and prior to liver damage and the abnormal biochemical changes in the patient.

6. A high incidence of hepatitis and Au antigenemia are observed in patients undergoing chronic renal dialysis as well as in the technical and medical staffs of dialysis units. Intimate contact with infected blood and blood products as well as other infected body fluids, instruments and equipment appears to be responsible for transmission.

The above observations, taken together with the virus-like properties of the antigen described earlier, suggest that the Au antigen is intimately associated with or is a part (the capsid or the protein coat) of the etiologic agent of human viral hepatitis. However, more recently, larger particles, ranging in size from 30-44 m $\mu$ , have been detected in Au antigen positive sera from hepatitis patients and in culture fluid taken from a human lymph node organ culture that had been inoculated with Au antigen positive hepatitis serum. It has been proposed that the larger particles may represent the complete hepatitis virus and the smaller (Au antigen particles) the surplus virus-coat proteins. Alternatively, the larger particles may be produced by in vitro self-assembly of the smaller particles.<sup>2</sup>

Au antigenemia is detected toward the end of the incubation period and during the early phase of the disease. It may persist from only one day to several weeks. When it persists for more than three months (apparently for an indefinite period), it is believed to be associated with chronic or carrier state hepatitis. Susceptibility to chronic infection with Au antigen is believed to be controlled by an autosomal recessive gene. Individuals with this inherited susceptibility do not ordinarily manifest clinical or biochemical evidence of hepatitis.

Continuous suspension cultures have been readily established by a number of investigators from circulating leukocytes of about 60 per cent of IH patients. Moreover, herpes-like virus (Epstein-Barr virus) has been observed in continuous lymphoblastoid cell lines established from the peripheral blood of IH patients. However, the virus cannot be etiologically associated with the disease as it possesses a variety of biophysical properties inconsistent with those believed to characterize the hepatitis agent.

The above points of evidence for the etiologic role of Au antigen in viral hepatitis are tempered by a number of negative points. The presence of Au antigen in normal individuals with no evidence of hepatitis, the full susceptibility of individuals with Anti-Au antigen antibodies to transfusion hepatitis, observation of similar particles in the blood of pa-



tients with other diseases and the consistent failure to show a definite biologic activity for the Au antigen have been considered as evidence against the etiologic role of this antigen in viral hepatitis. Currently, the presence of Au antigen in various sera is detected by the complement fixation, hemagglutination, agar-gel double immunodiffusion, counter immunoelectrophoresis (or cross-over electrophoresis) and high voltage immunoelectrophoresis. At this writing, a standardized, universally acceptable procedure has not been developed. Some tests require less time, but may not be as sensitive as those requiring longer time, more reagents or specialized equipment. Laboratories using the complement fixation test recommend it as the most sensitive procedure. Other laboratories use the complement fixation or such procedures as agar-gel double immunodiffusion, counter immunoelectrophoresis and high voltage immunoelectrophoresis. The complement fixation test is recommended because of its well established and time-honored sensitivity in various biological systems, its simplicity and built-in controls, and the thorough familiarity of all competent laboratory personnel with its various aspects.\* However, the newly described hemagglutination assay for Au antigen and the hemagglutination inhibition test for antibodies to Au antigen appear equally sensitive.<sup>7</sup> A wide variation (from 30 to 70 per cent) in the detection of Au antigen, with different antisera, has been observed. Antisera detecting Au antigen in 70 per cent of the acute viral hepatitis patients were found, by immunoglobulin chromatography, to contain the anti-Au antigen antibodies in the IgM component, while those detecting Au antigen, in only 30 per cent of the cases, contained the antibodies in the IgG component.

Antigens different from the Au antigen have also been discovered in hepatitis patients: A particulate antigen has been detected in fecal extracts of about 41 per cent (90 of 220) of hepatitis patients and of about 3 per cent of non-hepatitis patients. The antigen appeared early in the disease and disappeared within three weeks of the first appearance of dark urine; it was serologically distinct from Au antigen. Another new antigen was also detected in the sera of 65 per cent of patients with IH in three epidemics occurring in Italy and England. The antigen was detected by gel diffusion, with a serum from a multiply-transfused patient that also reacted with the Au antigen. However, the new antigen designated epidemic hepatitis associated antigen (EHAA) was not found in 2,000 normal controls and 50 patients with other viral diseases. All patients positive

for EHAA antigen were negative for Au antigen. The EHAA antigen appeared early in the disease and disappeared during convalescence. It has been proposed that the new antigen is specific for IH. The involvement of Au antigen, or an antigen similar to it, in the pathogenesis of primary biliary cirrhosis was recently suggested. Particles identical to Au antigen, as observed by electron microscopy, as well as Au antigen or Au antigen antibodies, as detected by serological procedures, were found in the sera of 11 of 12 and 9 of 10 patients, respectively. Immune complexes containing the above antigen and antibody may be present in the disease and hence may play an important role in the pathogenesis of primary biliary cirrhosis. Another study carried out in Uganda indicated that Au antigen was present in the sera of 40 per cent of patients with hepatocellular carcinoma. More recently, an association between the Au antigen and polyarteritis nodosa was suggested. Among eleven such patients, four had Au antigenemia and three showed Au antigen-immunoglobulin complexes in the serum and Au antigen-homologous IgM antibody-complement components complexes deposits in the blood vessel walls.<sup>9</sup>

### Concluding Remarks

Firstly, it is obvious from the preceding story that the real culprit in the causation of viral hepatitis is still at large and that the newly discovered Au antigen is associated with a variety of unrelated pathological conditions. The role of Au antigen in viral hepatitis has not yet been elucidated. In order to be etiologically responsible for such an infectious, presumably viral, disease, it must contain either an RNA or DNA component and show biological activity. So far neither of these two properties has been demonstrated for this antigen. Secondly, and perhaps more importantly from the practical point of view, it is estimated that each year transfusion causes about 30,000 cases of overt hepatitis and 1,500-3,000 deaths in the United States. Since the ratio of subclinical infections acquired by transfusion to clinical hepatitis is at least 5:1, the actual incidence of transfusion-associated hepatitis may exceed 150,000 cases. Currently, the most sensitive tests for the detection of Au antigen in the sera of blood donors can eliminate about 25 per cent of Au antigen positive donors and thus by applying the presently available techniques some 40,000 cases of hepatitis may be prevented each year. It is hoped that in the near future, more sensitive tests will be developed, more reliable test reagents will become available and the licensure problems will be solved and thus all infectious blood and blood products will be excluded from human use.

*(Continued on page 236)*

\* The complement fixation test is currently used at KUMC Diagnostic Virology Laboratory for the detection of Au antigen in patients suspected of having viral hepatitis.

# Cerebellum and Nystagmus

## *The Effect of Caudal Half Fastigial Nuclear Lesions Upon Postcaloric Nystagmus*

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SEVERAL AUTHORS have postulated that release of vestibular centers from cerebellar inhibition is responsible for oculovestibular reflex disturbances.<sup>1-5</sup> Other authors have suggested that a hyperexcitable postcaloric response may be indicative of disease involving the midline structures of the cerebellum and the roof of the fourth ventricle.<sup>6, 7</sup> More specifically, because of the connections of the uncinate fasciculus, the caudal half of fastigial nucleus of the side opposite to the hyperactive postcaloric response has been implicated as the site of the lesion.<sup>7, 8</sup> The object of this investigation was to explore this clinical hypothesis in the laboratory by stereotactically ablating the caudal half of the left fastigial nucleus of cats and subsequently observing the postcaloric response and physiologic behavior of the animals.

### Materials and Methods

#### NYSTAGMOGRAPHIC TESTING PROCEDURES

Nystagmographs were made prior to the placement of stereotactic lesions in the region of the fastigial nuclei and again at the end of the recovery period. Conscious, healthy, adult cats weighing between 2 and 3.5 kilograms were immobilized in a modified rabbit box. Unipolar needles were used for the electrodes in obtaining the electronystagmograph; two active electrodes were placed subcuticularly at each lateral epicanthal angle, and an indifferent electrode was placed between the animal's eyes. Nystagmus was produced by irrigating the external auditory canals with ice water for 30 seconds. After stimulating individually the right and then the left labyrinth, the postcaloric nystagmus was recorded at a paper speed of 10 millimeters per second with a modified Grass model 5 polygraph which was designed for use in clinical nystagmography.

#### STEREOTACTIC PROCEDURE AND SUBSEQUENT OBSERVATION

After anesthetizing the animals with pentobarbital injected intravenously, their heads were positioned in a Labtronics stereotactic instrument. Lesions of the left fastigial nucleus were placed stereotactically with an epoxy insulated stainless steel electrode. The

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Several authors have suggested that in patients a hyperactive postcaloric response is indicative of a central lesion involving the caudal half of the contralateral fastigial nucleus.<sup>7, 8</sup> The present work, which combined postcaloric testing with experimentally placed lesions in the caudal half of the fastigial nucleus of cats, does not substantiate that hypothesis. The work indicates that the caudal half of the fastigial nucleus of the cat is concerned primarily with postural reflexes and has no role in controlling oculovestibular reflexes. The work of other authors, when compared with the present work, suggests that the lateral half of the nodulus may be the cerebellar control center for oculovestibular reflexes.

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electrode was 1/2 millimeter in diameter and had a 1 millimeter exposed tip. Eight mA of current was delivered to the electrode by a D.C. fulgurator for a period of 20 seconds.

During a five to seven day postoperative period, the animals were observed for spontaneous nystagmus and behavioral disorders. Postoperative caloric stimulation at the end of the observation period was performed. Following the caloric testing, the animals were sacrificed with a lethal dose of pentobarbital.

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injected intraperitoneally. They were perfused with normal saline followed by 10 per cent formalin.

#### HISTOLOGICAL PROCEDURES

The brains were removed, fixed in 10 per cent formalin, dehydrated in graded alcohols, cleared with xylene, and embedded in paraffin. The locations of the lesions were ascertained by cutting serial sections at 10 micra, and by staining for nissl substance with the Fernstrom cresyl violet acetate procedure.

#### Results

Twenty cats were used in the study. Three animals expired during administration of the anesthesia; a fourth expired at the termination of the surgical procedure. Of the remaining 16 animals, three had lesions which were restricted only to the caudal half of the fastigial nucleus (cats, F, H, and R).

#### HISTOLOGICAL RESULTS

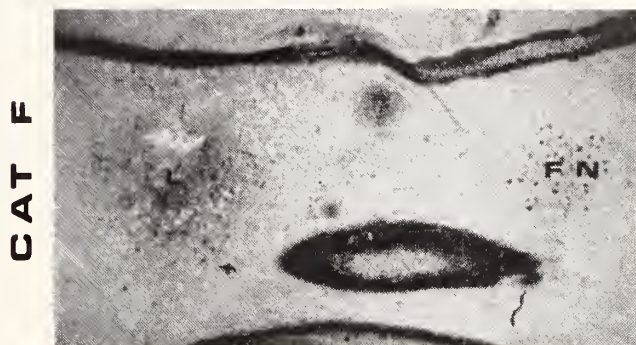
Ablations in all three animals involved 80 to 100 per cent of the caudal half of the nucleus. In Cat F the lesion involved 80 per cent of the caudal half of the fastigial nucleus. The lesion in Cat H involved 90 per cent of the region. The sections of the brain of Cat R revealed a lesion involving exclusively 100 per cent of the caudal half of the fastigial nucleus. None of the lesions seemed to encroach upon the interpositus or the vermis. Photomicrographs of characteristic lesions for each of the animals are shown in *Figures 1, 2, and 3*. The rostrocaudal extent of the lesions is shown in *Figure 4*.

#### NYSTAGMOGRAPHIC RESULTS

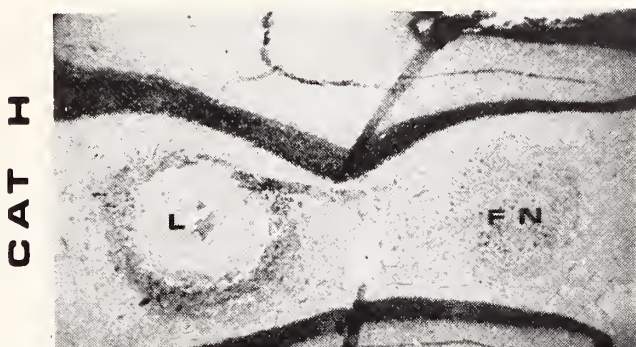
Data from the thirteen animals with lesions outside of the fastigial nucleus was used to test the validity of the method of caloric stimulation. *T* values comparing the difference between preoperative and postoperative nystagmographic results for both the right and left labyrinths were respectively 1.01 and 0.032. Both of these values are, according to the *T* tables, not significant, even at the five per cent level of confidence. Therefore, since there was no significant difference between pre- and postoperative nystagmographs when the lesions were outside the caudal half of the fastigial nucleus, the caloric testing procedure was judged suitable for evaluating the three animals with pure lesions of the caudal half of the left fastigial nucleus.

Nystagmographic data from the three cats with lesions involving only the caudal half of the nucleus is summarized in *Figure 5*. Beats per second were used as a measure of amplitude of the postcaloric response. After the ablation of the caudal half of the left fastigial nucleus of Cat F, the amplitude, when

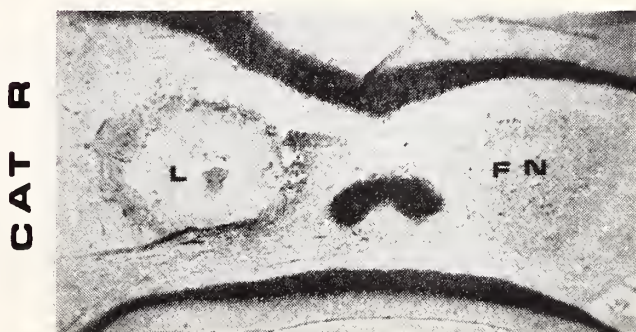
**FIGURE 1**



**FIGURE 2**



**FIGURE 3**



*Figures 1-3.* Sections through the middle of the caudal half of the fastigial nuclei of cats F, H, and R. Compare the lesioned area (L) on the left with the normal fastigial nucleus (FN) on the right.

the right labyrinth was stimulated, was essentially unchanged; but, stimulation of the left labyrinth caused an increase of 6/10 beats per second. In Cat H, the amplitude increased  $\frac{1}{10}$  beat per second in the right labyrinth, and decreased  $\frac{1}{10}$  beat per second in the left labyrinth. In Cat R, the amplitude decreased one full beat per second when the right labyrinth was stimulated and decreased  $\frac{9}{10}$  beats per second when the left was stimulated.

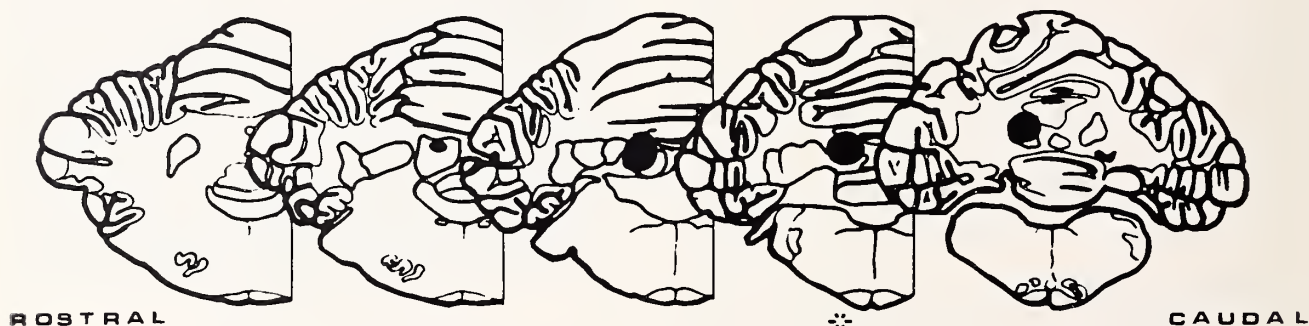
Time elapsed from the onset of irrigation until the conclusion of nystagmus was used as a measure of duration. An unexpected result was a decrease in time of the postoperative postcaloric response in all labyrinths but the right of Cat R, and that was only

# FASTIGIAL NUCLEAR LESIONS

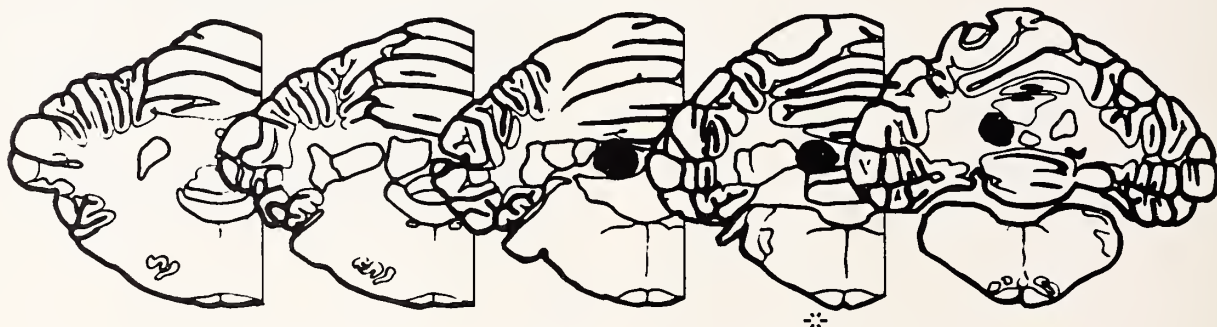
## CAT F



## CAT H



## CAT R



\* PHOTOMICROGRAPHS APPEAR IN FIGURES 1,2,&3

Figure 4. Diagrammatic representation of the rostrocaudal extent of the lesions shown in Figures 1-3.

12 seconds longer than the 104 seconds of nystagmus recorded preoperatively.

It was concluded that in the three animals, pure lesions of the caudal half of the left fastigial nucleus did not cause contralateral hyperactive postcaloric nystagmus.

### BEHAVIORAL RESULTS

Observation of the animals in the postoperative period failed to disclose at any time either spontaneous or positional nystagmus; but other physiological deficits were observed. All the cats, F, H, and

R, hugged the floor, hesitated to move about their cages, refused food, and were ataxic during the first day after surgery. After the first postoperative day, Cat F was no longer ataxic. However, on the second day both Cats R and H continued to demonstrate ataxia when observed for normal progression of movements. Cat H had recovered completely by the beginning of the third postoperative day. Cat R continued to have marked difficulty, falling and staggering to both sides, until the time of sacrifice. These observations suggested that the role of the fastigial nucleus in vestibular function is postural and not related to eye movements.



## POST CALORIC DATA

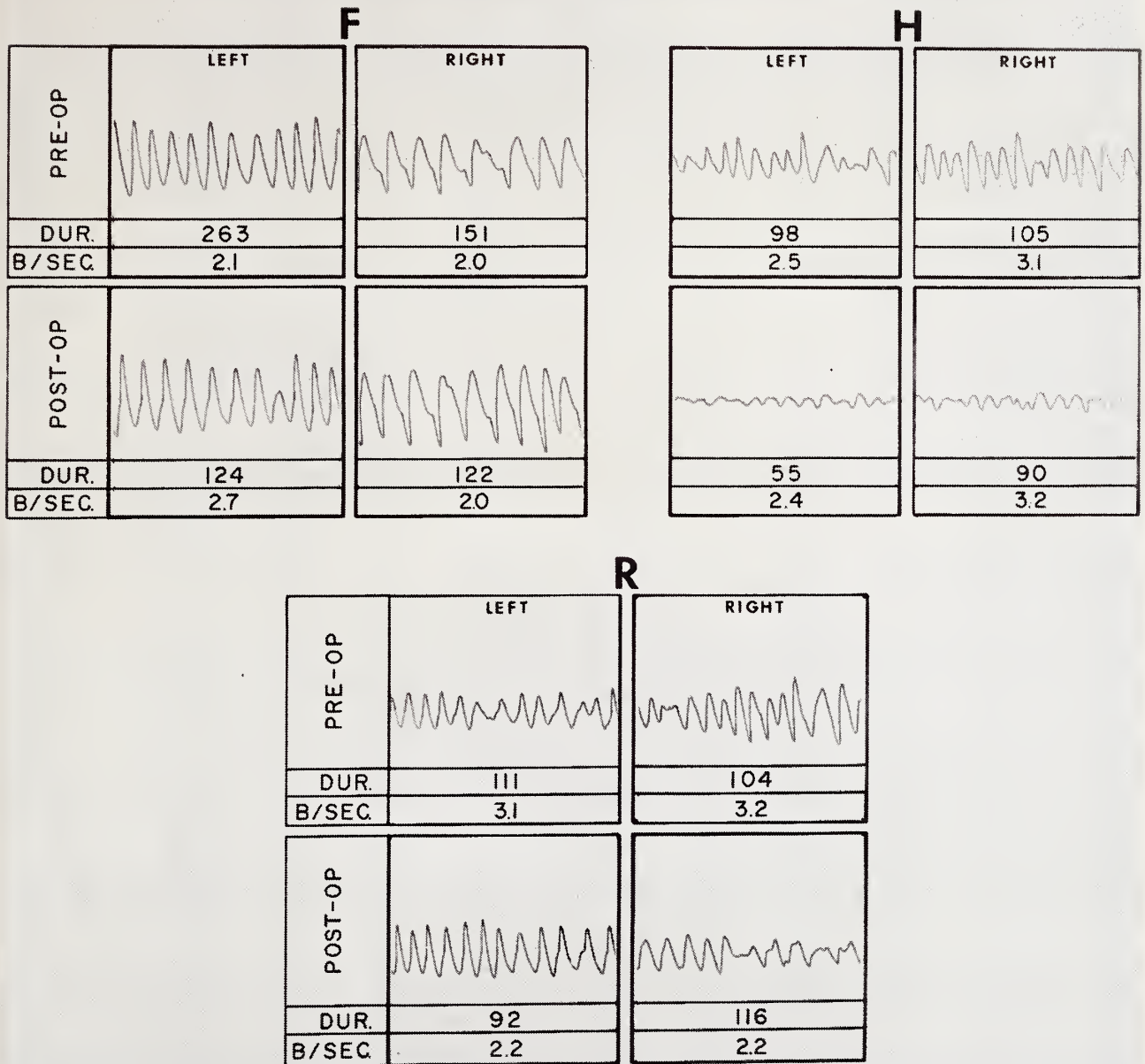


Figure 5. Nystagmographic data from cats F, H, and R.

## Discussion

Sachs and Fincher (1927) hypothesized "that ocular disturbances, such as nystagmus, only occur if the central nuclei (fastigial) of the cerebellum are involved or pressed upon." If they were correct, it was felt that, due to the connections of the uncinate fasciculus, the labyrinth contralateral to the side where a caudal half fastigial lesion was placed should give a hyperactive postcaloric response. In the present work the hypothesis was not substantiated. Release from cerebellar inhibition of oculovestibular reflexes was not obtained with pure lesions of the

caudal half of the fastigial nucleus in three cats. Only disequilibrium was caused by the lesions. If the release of the vestibular system from cerebellar inhibition does cause nystagmic abnormalities in the cat, then the site for inhibition must be elsewhere in the cerebellum than the fastigial nucleus.

The lateral half of the nodulus presents an excellent site for the location of a coordination center for oculovestibular reflexes because its ablation definitely causes positional nystagmus or hyperactive calorically induced nystagmus.<sup>1, 3, 4, 9-18</sup> Its connections suggest that it is in a position to receive in-

formation from the primary vestibular fibers as to the strength of the original stimulus at the receptor and from the reticular formation as to the kind of response which will be evoked from the ocular muscles. It is also in a position to influence directly the response of the vestibular nuclei via the direct corticofugal system.

Caloric testing has been used clinically as a means of determining whether a lesion is central or peripheral. If the postcaloric response could be correlated with lesions in specific locations in the cerebellum, the test would be of much greater value as a diagnostic tool.

## References

1. Aschan, G.; Ekvall, L., and Grant, G.: Nystagmus following stimulation in the central vestibular pathways using permanently implanted electrodes. *Acta Otolaryng.* (Supp.) 192:63-77, 1963.
2. Dow, R. S.: Effect of lesions in the vestibular part of the cerebellum in primates. *Arch. Neur. Psychiat.* 40: 500-520, 1938.
3. Dow, R. S., and Moruzzi, G.: *The Physiology and Pathology of the Cerebellum*. Minneapolis, The University of Minnesota Press, 1958.
4. Grant, G.; Aschan, G., and Ekvall, L.: Nystagmus produced by localized cerebellar lesions. *Acta Otolaryng.* (Supp.) 192:78-84, 1963.
5. Spiegel, E. A., and Scala, N. P.: Positional nystagmus in cerebellar lesions. *J. Neurophysiol.* 5:247-260, 1942.
6. Fredrickson, J. M., and Fernandez, C.: Vestibular disorders in fourth ventricle lesions. Experimental studies in the cat. *Arch. Otolaryng.* (Chicago) 80:521-540, 1964.
7. Riesco-Maclure, J. S., and Stroud, M. H.: Dysrhythmia in post-caloric nystagmus: its clinical significance. *Laryngoscope* 70:697-721, 1960.
8. Sachs, E., and Fincher, E. F.: Anatomical and physiological observations on lesions in the cerebellar nuclei in macacus rhesus. *Brain* 50:350-56, 1927.
9. Allen, G., and Fernandez, C.: Experimental observations on postural nystagmus. I. Extensive lesions of the cerebellum. *Acta Otolaryng.* (Stockholm) 51:2-14, 1960.
10. Bender, M. B.: *The Oculomotor System*. New York, Harper and Row, 1964.
11. Carrea, R. M. E., and Mettler, F.: Physiologic consequences following extensive removals of the cerebellar cortex and deep cerebellar nuclei and effect of secondary cerebral ablations in the primate. *J. Comp. Neur.* 87:169-288, 1947.
12. Fernandez, C.; Alzate, R., and Lindsay, J. R.: Experimental observations on postural nystagmus in the cat. *Ann. Otol. Rhin.* 68:816-829, 1959.
13. Fernandez, C.; Alzate, R., and Lindsay, J. R.: Experimental observations on postural nystagmus. Lesions of the nodulus. *U.S.A.F. Sch. Aviat. Med.* 60:23:1-17, 1960.
14. Ivy, A. C.: The physiology of vestibular nystagmus. *Arch. Otolaryng.* 9:123-33, 1929.
15. Moruzzi, G., and Pompeiano, O.: Crossed fastigial influence on decerebrate rigidity. *J. Comp. Neur.* 106:371-392, 1956.
16. Nylen, C. O.: Oto-neurologic diagnosis of tumors of the brain. *Acta Otolaryng.* (Supp.) 33:1-151, 1939.
17. Pollock, L., and Davis, L.: The influence of the cerebellum upon the reflex activities of the decerebrate animal. *Brain* 50:277-312, 1927.
18. Spiegel, E. A., and Scala, N. P.: Vertical nystagmus following lesions of the cerebellar vermis. *Arch. Opth.* 26: 661-69, 1941.

## The Hepatitis Story

(Continued from page 231)

## References

1. Havens, W. P., and Paul, J. R.: Infectious hepatitis and serum hepatitis. Chapter 45, pp. 965-993, *Viral and Rickettsial Infections of Man*. Horspall, F. L., and Tamm, I., Editors. Philadelphia, J. B. Lippincott Co., 1965.
2. Behbehani, A. M.: Viral hepatitis. Chapter 33, *Human Viral, Bedsonial and Rickettsial Diseases: A Diagnostic Handbook for Physicians*. Springfield, Illinois, Charles C Thomas, Publisher, in Press.
3. Lorenz, D.; Barker, L.; Stevens, D.; Peterson, M., and Kirschstein, R.: Hepatitis in the marmoset. *Proc. Soc. Exp. Biol. & Med.* 135:348-354, November, 1970.
4. Bearcroft, W. G. C.: Susceptibility of pata monkeys to reinfection with infectious hepatitis. *Brit. J. Exp. Path.* 50:327-330, June, 1970.
5. Blumberg, S.; Sutnick, A. I.; London, W. T., and Millman, I.: Australia antigen and hepatitis. *New Eng. J. Med.* 283:349-354, August 13, 1970.
6. Krugman, S., and Giles, J. P.: Viral hepatitis. New light on an old disease. *J.A.M.A.* 212:1019-1029, May 11, 1970.
7. Prince, A.M.: An antigen detected in the blood during the incubation period of serum hepatitis. *Proc. Nat. Acad. Sci.* 60:814-821, July, 1968.
8. Vyas, G. N., and Shulman, N. R.: Hemagglutination assay for antigen and antibody associated with viral hepatitis. *Science* 170:332-333, October 16, 1970.
9. Gocke, D. J.; Hsu, K.; Morgan, C.; Bombardieri, S.; Lockshin, M., and Christian, C. L.: Association between polyarteritis and Australia antigen. *Lancet* II:1149-1153, December 5, 1970.

## FILM ALERTS MEDICAL ASSISTANTS TO THE PITFALLS IN MEDICAL OFFICES

Wyeth Laboratories of Philadelphia has produced a motion picture, "Case in Point," to dramatize the "do's" and "don'ts" for the medical assistant while receiving and caring for patients in her physician-employer's office.

Designed primarily to avoid malpractice suits, the film is subtitled "Medico-Legal Responsibilities of the Medical Assistant." In enactments of the "right and wrong way," it deals with such problems as handling emergencies when the physician is away, medication errors, first-aid problems, missing and stolen prescription blanks, and confidential information. The producers recommend the picture for both physicians and their staffs and suggests scheduling it for a "boss's night" program. It is 25 minutes, 16mm, in sound and color, and available on free loan from Wyeth Film Library, Box 8299, Philadelphia, Pennsylvania 19101. "Case in Point" was premiered in October, 1969, at the Honolulu Annual Convention of the American Association of Medical Assistants.



# Sunlight

## —Friend or Foe?

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PROBABLY THE BEST we, as physicians, can say about sunlight is that it is a mixed blessing. Granted, its ultraviolet (UV) component (which is what we shall be concerned with chiefly in this article) kills germs, its infrared portion warms the planet, and its visible rays allow us to see what we are doing. From a clinician's point of view, however, the liabilities of sunlight often seem to outshine its assets. In our affluent, ergosterolized society, the stimulation of cutaneous vitamin D synthesis by UV seems an almost comic virtue. By contrast, the inimical effects of UV seem to weigh heavily in our practices.

It is almost a platitude now to point out that sunlight, in particular UV light, gives us, in inverse proportion to our natural coloring, wrinkles and skin cancer (squamous cell carcinoma almost certainly, and possibly basal cell carcinoma as well). Perhaps less well known is the fact that senile keratoses (actinic keratoses, solar keratoses) are a direct and proximate result of chronic exposure to sunlight and that, in about 20 per cent of patients, squamous cell carcinoma arises in one or more of the lesions.

There is another constellation of clinical disorders in which the patient tells the physician that sunlight either causes eruptions or discomfort *per se* or else aggravates some pre-existing lesion: these are the so-called diseases of photosensitivity. In most such cases, the cutaneous lesions are highly suggestive, if not absolutely diagnostic. In others, a few selected laboratory tests or skin biopsy will usually establish the diagnosis. Most of the pigmentary disorders such as albinism and vitiligo fall into the former category. These patients, because they lack the principal physiological sunscreen in their skin, i.e. melanin, quickly become sunburned in the affected areas. There is another group of rare genetic disorders in which UV seems to aggravate the existing skin lesions. This group includes such entities as Hartnup disease, xeroderma pigmentosum (recently linked to faulty enzymatic DNA repair), poikiloderma congenitale of Rothmund-Thomson, Bloom's syndrome, Cockayne's syndrome (probably a variant of Bloom's, or vice versa), and hereditary benign telangiectasia. Unfortunately, the clinician in these cases has to rely almost entirely on the history and physical findings

to make the diagnosis, as the laboratory is not of much help. Treatment similarly is disappointing.

The cutaneous porphyrias are classical examples of diseases of photosensitivity. The two most common ones, porphyria cutanea tarda (PCT) and erythropoietic protoporphyria (EPP), present striking contrasts to one another. The cutaneous lesions in PCT are very characteristic, consisting usually of bullae, fragile skin, hyperpigmentation, hypertrichosis, and milia. The skin lesions in EPP, except during acute attacks, are usually very subtle. Patients with PCT as a rule do not object to being out in the sun. EPP patients, on the other hand, often experience an intolerable burning or "frying" sensation in sun-exposed skin, even through glass. One can usually make a firm clinical diagnosis of PCT even before the urinary porphyrins are assayed. In EPP, one must rely heavily on the laboratory estimation of red cell porphyrin.

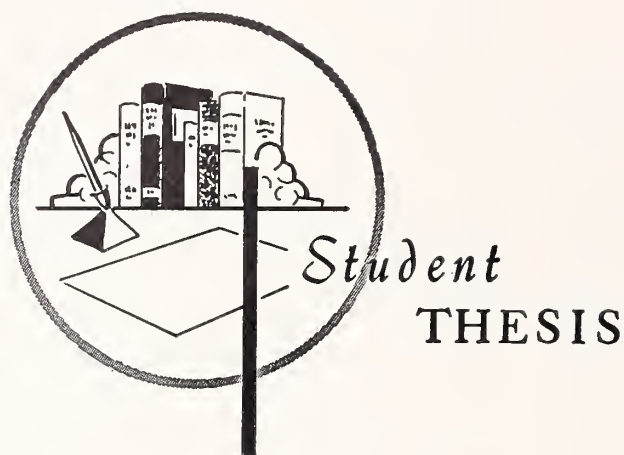
The other major group of diseases often characterized by photosensitivity are the "collagen-vascular diseases" such as lupus erythematosus and dermatomyositis. Around a third of patients with lupus complain of sensitivity to sunlight in many different ways (aggravation of rash, burning, fever, malaise, etc.), whereas a smaller percentage of patients with dermatomyositis do so. There are numerous hematological and immunological tests to help make one or another of these diagnoses. Skin biopsy is also helpful at times. Steroids and topical sunscreens such as para-aminobenzoic acid or the benzophenones help somewhat in treatment.

Polymorphous light eruption (PMLE), which some authorities believe may be a benign variant of lupus, heads the list of the remaining group of light-sensitive diseases. This list includes such miscellaneous items as Darier's disease, pellagra, solar urticaria, rosacea, recurrent herpes simplex, actinic reticuloid, and colloid milium. UV seems to exacerbate most of these, and it is presumably the specific pathogenic agent in PMLE. Phototesting finds one of its greatest applications in the diagnosis of PMLE.

Before attempting to assign one of the foregoing diagnoses to a given patient with an eruption in the exposed areas of the body, the practitioner must first rule out the possibility that the patient may have either applied or taken internally some photosensitiz-

*(Continued on page 243)*

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## *Adjustment to Acquired Blindness*

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OF ALL physical disabilities, blindness has long been one of the most dreaded. Sophocles, in the Oedipus cycle, called blindness the ". . . horror of darkness enfolding, resistless, unspeakable . . ." <sup>1</sup> and depicted the blinded Oedipus as a beggar using his daughter, Antigone, as his guide. In a more pensive mood, John Milton referred to his blindness as "that one talent which is death to hide/lodged with me useless . . ." <sup>2</sup> but continued his writing and dictated some of his most brilliant contributions to English literature following the onset of his disability.

The National Center for Health Statistics for the United States Department of Health, Education and Welfare, in its most recent survey on visual problems performed in 1964, revealed some form of visual impairment in 31.3 per 1,000 of the general population over six years of age. Of this sample, 6 per 1,000 could not read newsprint and 0.4 per 1,000 lacked even light perception. By these figures, almost 80,000 individuals over six in the United States must be considered totally blind, and another 1.2 million as having travel vision only. Forty-eight percent of these are 65 or over, and almost 85 percent noticed the onset of visual impairment following the age of 17. When compared with the results of a similar survey in 1959, these figures indicated

an apparent increase in all forms of blindness.<sup>3</sup> Thus, in the United States, blindness is largely a phenomenon in elderly persons with acquired visual handicaps. (The term blindness is used here to mean both complete visual loss and visual loss with residual travel vision, unless otherwise stated. No specific definition of blindness is necessary here, although it is often defined as vision of less than 20/200 in either, or both, eyes.)

Blindness, whether congenital or acquired, obviously requires a major adjustment to life. The congenitally blind, or those blinded in early childhood, are spared undergoing a secondary adjustment process, since they have never known a life with vision and undertake their original social development as blinded individuals. The acquired blind, however, have most likely been active, productive members of a sighted society for many years, and with the onset of impaired vision, must develop a totally new outlook concerning their relationship to the social structure. These individuals actually must undergo a second socialization process, and emerge filling the role of the blind in contemporary society.

Louis Cholden, while a psychiatry resident at the Menninger Foundation in Topeka, Kansas, worked closely with the blind at the state training school there. He observed that an acquired handicap, in essence, required the development of a "different person" from his former self.<sup>4</sup> To understand the process of becoming this "different person," it is necessary to analyze the socio-psychological factors which influence the person with acquired blindness

\* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. Franks is serving his internship at the University of Louisville Hospitals, Louisville, Kentucky.



in the re-adjustment process to his changed environment. A number of areas need to be studied to provide a comprehensive view of this adjustment:

1. the individual's reaction immediately after learning he is blinded,
2. the influence of previously existing personality disorders on the adjustment,
3. the interaction patterns which develop between a blinded person and sighted individuals, including the concepts of stereotyped role-filling and the blind as a minority group,
4. the ability of the blinded person and his associates to handle the dependency problem inherent in this disability, and
5. the psychosexual challenge resulting from the visual loss.

### Post-Blindness Reaction

The causes of visual impairment and loss are many. Some, such as trauma, fire, and optic nerve poisons can cause almost immediate loss of vision; others, such as glaucoma, cataracts, and optic atrophy are insidious in onset, requiring an extended time period to produce blindness. (A conversion reaction may mimic true visual loss, but can be detected by the lack of the proper history for sudden visual loss, inconsistencies with known possible anatomical lesions, and possibly by "la belle indifference.") Regardless of the basic cause, if not a conversion reaction, at some certain stage in the progression of the visual loss, the individual, either through his own rational intelligence or through the advice of professionals, must realize that he is now blind.

Dr. Cholden, in his psychiatric work with the blind, found that almost immediately after being informed that vision was permanently and irrevocably impaired, the patient entered a period of severe depression with all the classic characteristics, including suicidal ideation. Some observers feel that this depression is necessary as a period of mourning for the lost eyes, much as one mourns over the death of a friend or family member. Essentially, this marks the death of a seeing individual, and the birth of a blinded person. Treatment at this time should consist primarily of support to aid them through the depression, and should not be interrupted by aggressive psychiatric therapy. Evidence supports that this period of mourning can be prolonged by overwhelming sympathy and pathos from either professionals or emotional relatives. Occasionally, at this time, because of this depressive reaction, the physician is tempted to offer solace by telling the patient that his vision, through future medical knowledge, perhaps can be restored. This may indeed provide a means of ending the depression; however, the individual will then be unwilling to accept his blindness as real, creating a denial phenomenon which

may last indefinitely.<sup>5</sup> The individual will most likely be forced to undergo the entire depression cycle again at some future time in order to reach a satisfactory adjustment with his disability.<sup>6</sup>

After the spontaneous end of this period, the patient enters a stage comparable to that of a child learning about his environment. With this begins the process of becoming the "different person" felt to be so important to the adequate adjustment of the blinded. Many avenues of assistance, such as vocational rehabilitation, blind training, and family counselling can be added to the program at this stage to help the person realize his relationship to the social structure, not merely as a member of society, but as a blinded member of a seeing society. After the adjustment, "The patient must still feel he is a complete and worthy person, not inferior because of his handicap, only different."<sup>7</sup>

### Pre-Existing Personality Disorders

The pre-existing personality characteristics of the blinded person seem to play an important role in determining the social adjustment after the onset of visual loss. Blindness, by itself, does not appear to cause either psychotic or neurotic personality disorders, nor does it predispose to the development of these.<sup>8</sup> However, blindness may well be the precipitating factor in decompensation from pre-existing personality disorders. If the individual is of sound mental health prior to the onset of blindness, and experiences no unusual difficulties in the adjustment process, his overall adjustment to the disability will most likely be satisfactory.

One survey, performed on soldiers blinded during World War II, provided some interesting insights into the maladjustment of the newly blinded. This study found that six out of ten soldiers blinded during service made a satisfactory adjustment without any additional psychiatric assistance other than proper orientation and vocational training. Those who were only partially blinded experienced a much higher rate of emotional maladjustment. This is attributable to several factors. Total blindness is real, final and cannot be questioned; the soldier had no recourse but to accept the disability. The partially sighted, with light perception or slight vision in one eye, failed to realize the certainty of their disability, and continued to express either hope for recovery of their lost vision, or anxiety over the possibility of losing their remaining vision. These individuals tended to place confidence in medicine or religion to restore vision, miraculously. These false hopes and anxieties interfered with their rehabilitation program and gave rise to depression, aggressive behavior, or frank neuroses. Even the totally blinded person, with a neurotic or sociopathic history, could achieve an adequate adjustment more quickly than the par-

tially blinded with no personality disturbances.<sup>9</sup> High ego strength, low anxiety, and the adaptation of a positive attitude toward blindness seem to be important considerations in the adequate adjustment of the newly blinded.<sup>10</sup>

### Interaction Patterns

Even if the newly blinded person makes a satisfactory personal adjustment to his disability, he then faces a second major challenge in adjusting to the interaction process between a sighted person and himself. "Blindness as a physical disability is overshadowed by the fact that it is also a social handicap."<sup>11</sup> Since vision seems so necessary to men, the sighted tend to define blindness in a negative manner, as the absence of sight; however, blindness is much more than that. It creates a unique role in society for the blinded person, a role which is difficult to fill because of the lack of guidelines and role definitions. "The blind lie outside the normal social continuum, so that their difference is one of type rather than degree. Just as the child holds a unique status rather than being classed as an immature adult, so the blind are more than normal people who cannot see."<sup>12</sup>

Society, in general, views the blinded in one of two ways, both stereotyped, and obviously inadequate to explain the manifold complex levels of performance seen in the blind. The blind can either fill the role of the beggar, such as Oedipus, or that of the brilliant, but disabled person who overcomes all odds to achieve success, such as John Milton or, more recently, Helen Keller. There are strong historical precedents for the blind assuming the role of beggars, since in ancient civilizations, begging was the primary means of earning a livelihood for the blind person. During Medieval times, the blind were the upper echelon of beggars, and the choice locations were reserved for them, perhaps because of overlying religious thoughts of blindness as the ultimate penitence for sin on earth.<sup>13</sup> This stereotyped view of the blind beggar is still predominant today.

During the 18th century in France, work began in teaching the blind to care for themselves, and to train them to lead a gainful life. Because of the remarkable adjustment some blind have achieved since then, another stereotype has arisen which depicts the blind as developing a sixth sense, a power to do that which even normal sighted persons cannot. Helen Keller provides an excellent example of a person who seemed to have almost "superhuman" qualities. Blind musicians are often thought to possess almost magical musical ability, when in fact it is related to the full development of their talents in spite of their visual deficit, as seen in Ray Charles and José Fleciano. However, both of these are purely stereotyped views, and in no way allow for the complex levels of interaction of which most blind persons are

capable. Overcoming these stereotypes and being accepted as a blind person with no unusual talents, but yet able to care for himself, is most difficult.

In a sense the blind are treated by society much as are members of recognized minority groups. Louis Wirth has defined a minority group as "... a group of people who, because of physical or cultural characteristics, are singled out from the others in the society in which they live for differential and unequal treatment and who therefore regard themselves as objects of collective discrimination."<sup>14</sup> He stresses the reciprocal dominance-submission patterns between groups, the sense of identification, actual deprivation or exclusion from privileges, and frustrated expectations. The blind, however, do not actually fit this definition of a minority group, since it is doubtful if the blind consider themselves the object of collective discrimination. The blind person readily identifies himself as blind, and may feel that society discriminates against him, yet his identification as a member of an organized cohesive group is minimal. The blind are treated similarly, in many ways, to members of more obvious minority groups, and a consideration of the blind as an unorganized, unidentified minority group is legitimate in studying the social adjustment faced by the blind.

The interaction process between the sighted and the blind suffers from two distinct disruptive forces. First, basic and highly important components of the interaction process, such as eye contact and other symbolic behavior, are removed from the situation. Second, the persons involved in the process define the situation differently. The sighted person is most likely to use the meager stereotype he has of blinded persons. When the stereotype fails to fit the situation, the interaction process becomes increasingly more tense, and the sighted person's behavior may very well become bizarre and inappropriate, a type of behavior which he would never use with other sighted persons. The sighted person becomes increasingly anxious over the lack of proper interaction guidelines, and will seek to withdraw from the situation. The blind person feels this lack of proper interaction and reacts to the overture with marginal behavior of his own. Because of this, the interaction relationship suffers from abnormalities of both parties.<sup>15</sup>

### Dependency

Of special importance to the adequate adjustment of the blinded is the ability to handle the dependency problem inherent in this disability. As stated previously, Oedipus relied entirely upon his daughter to care for him after he blinded himself. Fortunately, few persons in contemporary society can afford this luxury, forcing the blinded individual to accept responsibility for his own care and behavior. This is especially important, since independence is a highly



valued characteristic of middle class American culture. No one definition of dependency is adequate to convey the many facets of this term. Herbert H. Coburn, in an article entitled "The Psychological Concept of Dependency"<sup>16</sup> states:

... the spirit of independence is inspiring and, as an individual motivation, it is healthy. But so is dependence. Dependency is not something bad, but something good; not something pathological, but something healthy; not something unusual, but something normal; not something accidental, but something that has been built into the species. Like other good things, one can have too much as well as too little. But the optimal amount is much greater than most people in our society think it to be. It is not more than most people actually have, but more than they think they should have, more than they admit to themselves or to others that they have.

By these standards, perhaps the blinded person's adjustment to assuming an overtly dependent role is not so much accepting more dependence but in recognizing the existence of previous dependency to which he has not admitted.

Since society defines dependency as implying weakness and lack of self-respect, the newly blinded person, already alienated from the social structure, may strive to assert an overly independent role, failing to realize the limitation of his own abilities. This can only lead to increased frustration and anxiety, destroying the progress previously made toward adequate adjustment. However, over-dependency is a constant and real problem, especially if the person has been somewhat dependent prior to his blindness. Good adjustment is achieved if the blind person does those things for himself which it is possible for him to do, and is willing to accept assistance when needed. Society, partially through its ignorance of the training possibilities for the blind, places the blinded person in a role of dependency and expects him to fill this role. For example, a blind person with good travel ability is often assisted across the street or led to his destination, rather than merely instructed of the route.

Certain factors seem to be closely related to the ability of the blind to adequately manage dependency. Those from upper and middle social classes are more likely to assume a good adjustment in regard to dependency than those from working class families, since the upper classes value independence more highly than the lower classes and because the lower classes have limited financial resources with which to gain professional assistance. Ethnic background, age at blindness, chronological age and residual vision may also be factors, but no survey has been performed to determine these relationships. The most important factor seems to involve the perceived attitudes of the blind. If the blind person

feels that influential persons in his environment favor independence, then the blind person is more likely to actually be independent. The blind individual is most likely to fill the role that he perceives his group members want him to take. The most important group members seem to be family members and sighted friends, with less influence from employers and other blind persons.<sup>17</sup>

### Psychosexual Challenge

Psychoanalytic theory has long recognized the importance of vision of the psychosexual adjustment process. The loss of the eye provides several areas of interest for the analyst:

1. the unconscious significance of the eye as a sexual organ, including the equation of eye with mouth and with genitalia;
2. the unconscious significance of the eye as a hostile, destructive organ, including the equation of eye with piercing phallus and with devouring mouth; and
3. the unconscious significance of blindness as castration, as punishment for sin.<sup>18</sup>

Some writers have observed that shortly after the onset of blindness, the person becomes very aggressive sexually, but this is almost always transient and the blinded person may then withdraw from sexual contacts.

### Case Presentations

Recently, two cases of maladjustment following the onset of blindness were hospitalized in the psychiatric ward at the Kansas City Veteran's Administration Hospital (KCVAH).

#### CASE 1

This is the second KCVAH admission for Mr. —, a 46-year-old Caucasian veteran from a medium-sized Missouri town. He is married and the father of three sons and a daughter. The previous admission here was for a medical evaluation, which revealed mild diabetes mellitus and diabetic retinopathy.

CC: "I was brought here by my brother for an evaluation and work-up."

HPI: In 1965, he developed progressive visual loss and was totally blind by December 1966. No specific diagnosis was ever confirmed, although he was told in an evaluation at a private hospital that "his capillaries were breaking down."

Several weeks prior to admission, Mr. — decided his wife and their eldest son, age 18, were having an incestuous sexual relationship. Although he had no direct proof of this, he interpreted various signs, such as the opening and closing of windows, scratching on the walls, noises under the house, and his son's activities as implying this. He finally decided his wife and son were not actually sleeping together, but merely trying to persuade him they were so his wife could obtain a divorce. No divorce has been discussed recently; however, he recalls his wife "mentioned" this in 1965 while he was losing his eyesight. He and his wife have not shared a bedroom since his visual loss. He sleeps

in a room alone, and his wife shares her room with the nine-year-old daughter.

The period following the onset of his blindness caused Mr. — a great deal of difficulty. He became withdrawn, anxious about the future, and quite hostile toward his family. Previously, he had been an active member of the community and church, but he now no longer participates in any social activities outside the home.

*PH:* After service in the South Pacific during World War II, he returned to Missouri, married a girl from his home town, enrolled in college, and eventually earned a Master's degree in agriculture with some credit toward his doctorate. He considered his marriage to be very stable until the onset of his blindness. In 1965, his wife started teaching school, leaving him at home alone. He devised an elaborate schedule, doing the same thing at the same time daily. His only outside interest became the beef calves, which he and his children reared during the year. About two years ago, the eldest son rebelled against the authoritarian control of his father and friction has continued between them since. All the children still reside at home, including the 18-year-old son, who attends a local college and works evenings.

*PE:* B.P. 130/80 P. 80 R. 20

Physical examination revealed an asthenic pale Caucasian male, appearing older than his stated age, with obvious bilateral lenticular opacifications. Laboratory studies revealed a mild anemia and a diabetic curve on six hour glucose tolerance test.

*Mental Status:* The patient was well-oriented as to time, place and person, but was uncertain of the real reasons for his admission to the hospital, although he realized he was a psychiatric patient. His speech, while somewhat slow, was relevant and organized, with no evidence of looseness of association.

He was quite willing to discuss his thoughts concerning his wife and son, but remained convinced his ideation was real. He exhibited little emotional tone while discussing this, almost assuming the role of a narrator.

The patient was intelligent and well-informed, with good memory recall. He did have difficulty with computation, but this was thought to be secondary to anxiety.

Psychological testing revealed an obsessive-compulsive personality.

*Diagnosis*—Obsessive-compulsive personality with paranoid ideation.

*Precipitating Stress*—Onset of blindness.

*Hospital Course:* He was very cooperative on the ward, and strived to maintain a good impression at all times. Eventually, he achieved a great deal of independence in travel. He was finally transferred to a rehabilitation center for the blind for counselling and training.

#### CASE 2

This is the third KCVAH admission for Mr. —, a 48-year-old Caucasian male veteran from Missouri. He is married and the father of five children, three of

whom are still at home. The two prior admissions were for depression and excessive ETOH ingestion.

*CC:* Depression for several months.

*HPI:* The patient had done fairly well, following his last discharge in September 1968, until three or four months prior to this admission in August 1969, when he became increasingly depressed because he was not employed. In 1956, he developed progressive diminishing vision in both eyes. Ophthalmic examination at this time revealed no cataracts or obvious optic atrophy. Eventually, the visual loss was attributed to either ETOH ingestion or ophthalmic cinchonism secondary to Atabrine or quinine use during World War II.

He has not been regularly employed since the onset of his decreased visual acuity. Prior to this, he had owned and operated numerous private businesses. After returning to the United States from the South Pacific campaign, he established a successful business, which he soon sold, and started over again in a new location. In 17 years, he and his family moved between 12 and 15 times, each time starting over building a business.

*PH:* His wife feels that he was never the same after returning from service. Before this, their marriage had been very stable. After his return, she felt that he could not seem to settle down, and living with him became more difficult.

Mr. — had completed two years of high school, when he quit to begin working. He married and had a child before entering service. After he noticed the loss of vision, he began to drink heavily, and became increasingly more depressed, eventually requiring his wife to perform routine tasks for him, such as feeding and dressing him. At this time, he was hospitalized, and recovered enough to return to the home. Soon the cycle repeated itself, and he was again hospitalized.

Before his visual loss, he often became overtly violent, and would occasionally destroy furniture in the home in a fit of rage.

*PE:* B.P. 160/100 P. 110 R. 20

Examination showed a well-developed, slightly obese Caucasian male of stated age with chronic macular lesions over his face. Ophthalmic examination revealed grossly decreased vision, although he did have residual travel vision.

*Mental Status:* He was well-oriented, but his affect was occasionally blunted. Speech was coherent, relevant, and showed no signs of looseness of association. He expressed concern over his problems, but had little insight into the depth and causes of these. Generally, he became depressed when thinking about himself.

Hypnotic therapy revealed an obsession concerning an Okinawan woman and her young child he killed accidentally one night while on guard duty, discovering this the next day.

Psychological testing showed depression.

*Diagnosis*—Depression secondary to onset of decreased visual acuity.

*Hospital Course:* With counselling and psychotherapy, he began to make a better adjustment to his home life, and was considering the possibility of blind training. However, he began to drink again on weekend



leave, and was eventually discharged with little real progress.

## Interpretation

Case 1 presents an interesting interpretation involving several of the areas discussed previously. During his immediate post-blindness state, he received little professional guidance in learning to understand his problem, and did not properly undergo the steps considered necessary to good adjustment. Certainly, there was a compensated obsessive-compulsive personality disorder prior to the onset of blindness. This became progressively more obvious, leading to paranoid ideation, since he no longer could adequately control all facets of his life. He has withdrawn almost entirely from interaction with the sighted society, other than his immediate family, structuring his life very carefully in an attempt to assert his total independence from others. Psychoanalytically, several interpretations might be possible, but certainly his sexual role underwent a remarkable change from that prior to his disability. Therapy consisted primarily of helping him adjust to his blindness and encouraging him to seek rehabilitation at one of the institutions designed for this purpose, which he eventually accepted.

Case 2 again shows poor post-blindness adjustment, complicated by excessive use of alcohol. After the onset of his disability, he no longer was able to fill the independent role of financial provider, which had been his primary means of controlling his family, and developed severe episodes of depression from his inability to adequately accept his current status. Because of his previous history of moving so frequently, he has few friends and his social interaction is primarily limited to his family. He has become increasingly dependent on his wife, requiring her to perform even routine trivial tasks for him, including feeding and dressing. He also has no interest in a sexual relationship with his wife at the present time.

Mr. — had very limited insight into his problems. Both psychotherapy and hypnotic therapy were attempted without noticeable success. The prognosis in this case is poor.

## Conclusion

The acquired blind face a tremendous adjustment to living with their disability. However, if there are no predisposing personality disorders, this adjustment can be made adequately with proper guidance and counselling. Blindness does not seem to be a cause of mental illness, although it may precipitate decompensation in tenuously adjusted or rigidly defended personalities. Of special importance to an adequate adjustment is the proper alleviation of the

immediate post-blindness depression, adequate counselling, and the perception of positive attitudes towards blindness by friends and family. Difficulties may well be encountered by those with slight residual vision, since these individuals are most reluctant to accept the disability as real and irreversible.

## References

1. Sophocles, *Oedipus the King*.
2. Milton, John: "On His Blindness."
3. Vital Health Statistics, Series 10, August 1968, pp. 1-76.
4. Cholden, Louis S.: *A Psychiatrist Works With Blindness* (American Foundation for the Blind, New York: 1958), p. 52.
5. Fitzgerald, Roy G.: Reactions to blindness. *Arch. Gen. Psych.* 22(4):370-379, April, 1970.
6. Cholden, p. 51.
7. Cholden, p. 27.
8. Gowman, Alan G.: *War Blind in American Social Structure* (American Foundation for the Blind, New York: 1957) p. 28.
9. Diamond, Bernard L., and Ross, Alice: Emotional adjustment of newly blinded soldiers. *Am. J. Psych.* 102:367-371, November, 1945.
10. Zarlock, Stanley P.: Magical thinking and associated psychological reactions to blindness. *J. Consult. Psych.* April, 1961, pp. 155-159.
11. Gowman, p. 3.
12. Gowman, p. 3.
13. Lowenfeld, Berthold: The social impact of blindness upon the individual. *The New Outlook for the Blind* 58(9):273-277, November, 1964.
14. Streub, Gordon F.: *Applied Sociology*, edited by Alvin W. Gouldner and S. M. Miller. New York, Free Press, 1965, p. 312.
15. Gowman, p. 4.
16. Coburn, Herbert H.: The psychological concept of dependency. *Rehab. Rec.* 5(2):37-40, March-April, 1964.
17. Lukoff, Irving F., and Whiteman, Martin: Attitudes towards blindness. *The New Outlook for the Blind* 55(2):1-6, February, 1961.
18. Blank, H. Robert: Psychoanalysis and blindness. *Psychoanal. Quar.* 26(1):1-24, January, 1957.

## Sunlight—Friend or Foe?

(Continued from page 237)

ing chemical. The most important internal agents to quiz the patient about are sulfonamides, thiazides, long-acting tetracyclines, phenothiazines, and oral contraceptives. The most common topical offenders are halogenated salicylanilides (present in many toilet soaps) and the furocoumarins, or psoralens (present in many plants).

After painting such a grim picture, one should add, in all fairness, that sunlight often benefits many patients with skin conditions such as acne, psoriasis, and atopic dermatitis. Perhaps this will not suffice to tip the scales overwhelmingly in favor of sunshine as a desirable commodity for modern man, but at least it should assuage any guilt feelings on the part of the beachgoer, who has already been intimidated into giving up his cigarettes and, any day now, his insect repellent.

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## The President's Message

DEAR DOCTOR:

The Kansas Medical Society is the oldest existing corporation in the state, having been chartered by the territorial legislature prior to statehood. It is a privilege and an honor for me to serve as the President of this esteemed organization and I accept the opportunity to serve not only my fellow physicians but also the patients of this great state.

We have entered the last third of the 20th Century in a time of challenge, of change and of great unrest. Everywhere the old order has been broken down and new forms of practice, new life styles and new concepts emerge. The challenge to medicine in the "seventies" is to remain united in the face of constant strife which seems to be all about us. Divisiveness appears to me to be the greatest danger to organized medicine and I appeal to all of my fellow physicians to unite with the Kansas Medical Society in furthering the goals of patient care in our state.

I feel that we are facing three major challenges this year and I would like all of us to consider the problem areas in seeking to solve our health care problems.

The first challenge is the furtherance of *medical education*. With our expanding population, more physicians are needed and they are needed right here in Kansas. We, the physicians of this state, must take the lead in urging the expansion of not only the University of Kansas Medical Center, but also in investigating and studying additional medical and educational facilities in other areas of the state. We must do everything we can to help expand and to constantly upgrade medical education in Kansas.

Second on my list of challenges is the furtherance of *family practice* in our state. We simply do not have enough family physicians in Kansas to provide adequate care for all citizens. With the establishment of family practice programs in Wichita and Kansas City we have a unique opportunity to once again be a center for the training and education of family practitioners and to develop a new "Kansas Plan" for the primary care of the majority of our citizens throughout the state. We must not only encourage young physicians to establish their practices here, but we must also insure that all new doctors do not tend to congregate only in our metropolitan areas. We must



find a way to make small town practice attractive because this is where the first need for physicians is in present-day Kansas.

The third and most important item on my agenda for this year is *getting younger doctors interested* in the Kansas Medical Society and getting them to work actively for and in our organization. When I say doctors, I mean interns, residents and newly established physicians, those under 30 and in their early 30's. This may take a little changing on our part, a little modernizing, but we have to do it if the Society is to continue in its great tradition and purpose.

As I said before, we have a lot to do in the next year and the only way we can succeed is for each of us to work within and for a united Kansas Medical Society. Let's get busy!

*Dr. J. Reale, M.D.*

President





## Editorial COMMENT



### *Legislative Studies of Interest to Physicians*

The Kansas legislature has adopted some congressional procedures. For example, the long and the short sessions are actually two parts of one unit. Upon adjournment of the session just concluded, bills not acted upon retain their status for next year. Committees may hold hearings during the interim between sessions. This year, numerous studies will be conducted, at least three of which are of major interest to the Medical Society.

An extensive examination will be made on medical and paramedical education in Kansas. The framework of this study is outlined in the KU Package Plan (see the February 1971 JOURNAL, page 64). Specific items to be explored will be the production of an increased number of physicians, particularly in the field of family practice, expansion of the medical school to other cities, acceleration of the medical course, and the creation of educational opportunities for such persons as nurse clinicians and returned medical corpsmen.

A second major study will be conducted on the subject of professional liability. A committee of the Medical Society has already recommended to the legislature a number of possible improvements, such as the reduction of the period for discovery, the creation of a formula in which the judgment bears some relationship to the damage, the establishment of controls over the contingent fee, and many more.

A third study involves generally the reorganization of state agencies, but in particular, the effect this will have upon the board of healing arts. The formula currently proposed is to make all agencies directly responsible to the governor. For example, there will be created a division of professional licensing, administrative services, and legal services. A secretary will direct the activities of some eighteen agencies, which in addition to the healing arts board, includes

the real estate commission, landscape architects, and so forth. The professional component of the healing arts board would act in an advisory capacity.

The above are but three of many subjects the legislature will study; however, these are of primary importance. It would assist your Society if you would submit constructive suggestions on any of these study subjects. Please send them to the executive office. They will be referred to the president and through him to the committee appointed to work with the legislative study group.

### NEW MEMBERS

*The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.*

J. D. Albright, M.D.  
Hutchinson Clinic  
Hutchinson, Kansas 67501

David G. Anderson, M.D.  
2415 North Main  
Hutchinson, Kansas 67501

Charles H. Bascom, M.D.  
323 North First  
Troy, Kansas 66087

Merle R. Bolton, Jr., M.D.  
10303 W. 70th Terr., Apt.  
205  
Shawnee Mission, Kansas  
66203

Jim Gessler (Student)  
K. U. Medical Center  
Kansas City, Kansas 66103

Lester L. Lansky, M.D.  
K. U. Medical Center  
Kansas City, Kansas 66103

W. A. Martin, D.O.  
947 Osage  
Kansas City, Kansas 66105

Billy H. Mask, D.O.  
420 Winterbrook  
Olathe, Kansas 66061

Roy Neil, M.D.  
Hays Pathology Laboratory  
Hays, Kansas 67601

Daniel L. Schlozman,  
M.D.  
K. U. Medical Center  
Kansas City, Kansas 66103

Ramon W. Schmidt, M.D.  
611 North Fifth  
Garden City, Kansas 67846

Loren F. Taylor, M.D.  
K. U. Medical Center  
Kansas City, Kansas 66103

Carroll D. Foorhees, M.D.  
520 Sixth Avenue  
Leavenworth, Kansas 66048

# Medical-Legal Page

## Physician Must Warn Family of Patient's Contagious Disease

A physician has a duty to advise and warn members of a family living with a patient of the patient's contagious disease, a Florida appellate court ruled. The physician's negligent failure to diagnose the disease would not negate this duty.

A man was examined and treated for about two years before the physician made a diagnosis of tuberculosis. The patient's two-year-old child was later found to have tuberculosis of the spine. Both the father and the child required extensive treatment.

The father filed a lawsuit against the estate of the then-deceased physician, not only for his own injuries resulting from alleged negligence in diagnosis, but also for the injuries sustained by the child as a result of contracting the disease from him. The trial court granted a summary judgment for the estate of the physician with respect to the child's injuries, and the father appealed.

On appeal, the executrix of the estate conceded that there might have been an issue of fact as to the negligent diagnosis of the father's disease. However, she contended that the physician had no duty to the minor child and, therefore, no recovery could be permitted for the child's injuries resulting from the alleged negligence.

Once the existence of the disease is known, a physician has a duty to inform a patient's family of the nature of the disease and of precautionary steps to be taken, the court held. The fact that the physician may negligently fail to diagnose the disease does not excuse him from his duty, the court ruled.—*Hofmann v. Blackmon*, 241 So.2d 752 (Fla. Dist. Ct. of App., Sept. 30, 1970; rehearing denied, Dec. 29, 1970)

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## Drug Reaction Case Involving Problems With Telephone Conversations and Records—Physician Found Not Liable

A general practitioner was not negligent in his treatment and prescription of certain drugs which caused a skin rash, a Louisiana appellate court ruled.

A woman consulted a physician complaining of stomach pains and cramps, nausea, vomiting and nervousness. After an examination, the physician made a diagnosis of acute cholecystitis with liver manifestations, hypertension and extreme nervousness, and a possible gastric ulcer. The physician prescribed "Liquid Estomul, Elixir Donnatal, Elixir Butisol Sodium, Phenaphen with Codeine, Enarax, and Probanthine with Phenobarbital."

The woman began taking the drugs. Two days later she developed a rash and experienced dizzy spells. She claimed that she telephoned the physician and described her symptoms. She alleged that he advised her to continue the medication.

When the symptoms continued, the woman's daughter allegedly telephoned the physician two days later. She claimed that she told the physician that the rash was more severe and was spreading. She further claimed that the physician told her to discontinue the use of only one of the six drugs prescribed.

When the rash continued, the daughter telephoned the physician a few days later, on a Sunday. The physician examined the woman in his office that same day. He immediately referred her to a dermatologist, who continued to treat her.

The woman filed a malpractice lawsuit against the physician. She claimed the physician was negligent in prescribing the six drugs to be taken simultaneously, in failing to take tests to determine if the woman could take the combination of drugs, and in failing to immediately discontinue the use of the drugs when the reaction developed.

(Continued on page 251)

## MOVING?

When you change your address, be sure to notify the JOURNAL, preferably one month in advance. In that way, you'll get every issue on time. Simply print your name, old address, and new address, on a postal card and send to: THE JOURNAL OF THE KANSAS MEDICAL SOCIETY, 1300 Topeka Avenue, Topeka, Kansas 66612.



## THE AGING KANSAS PHYSICIAN

The average Kansas physician is over 52 years old. But in arriving at this figure, we include the younger men and women who are concentrated, for the most part, in the cities. Many of our smaller towns that once had two or three doctors have none at all. In 17 towns fortunate enough to have one, the age of each is 70 or over. Even in cities in the 20,000 to 25,000 class the problem of the aging doctor is grave. In Pittsburg, for example, the average age is 60.

Kansas appears to be about the midpoint in the national average; so the Kansas problem is only part of a national problem. Or should I say a national crisis? It is true that some relief has come from an influx of foreign graduates. But our schools simply are not providing the people with doctors, and with the present snail's pace, little hope of relief is in sight.

The fault must lie somewhere in our system of medical education. But the schools do not seem at all disturbed that the number of graduates is not coming anywhere near keeping pace with the increase in faculty, facilities, and expenditure. Let me take my own class of 1936 and compare it with the class of 1970. (And make no mistake about it, those classes of the thirties turned out good physicians, many of whom have achieved state and national prominence.) For our class of 72 graduates, there were 18 full time faculty members; this makes a student-instructor ratio of 1:4. Last spring, the 1970 class of 119 were taught by a faculty whose members totaled over 300. So, now we have to turn the ratio around and make it, not student-instructor but instructor-student. And the new ratio is not far from one student to three instructors! If this trend continues (and who says it won't?) how many instructors will it take to educate one doctor thirty years from now?

Some effort has been made in the last ten years to increase the number of students but it may be a case of too little and too late. In 1960, the graduates numbered 98, only 26 more than 24 years earlier. One who has watched the growth in buildings and faculties can only wonder why. Again, I would like to emphasize that, while using figures referable to our school, the problem is a national one.

The argument is advanced that the failure of medical schools to supply our people with doctors rests on the fact that many of these faculty men are engaged in research. Certainly no doctor needs to be sold on the importance of research or isn't thankful

for the boon it has been to his patients. Nor does he have anything but admiration for those who are doing it. But where is our sense of proportion?

Under present conditions of overwork, the will of the Kansas doctor to please his patients is weakened. Those of us who started out in the thirties well remember how we had to build a practice, to sell ourselves to the community. And after our practices were established we had to work constantly to maintain them. The customer *was* always right. But laymen are becoming embittered at the brusque, hurry up, assembly line treatment they often receive from the swamped doctor.

My concern for the future of medicine was an important factor in seeking a legislative post. In traveling this great state as your president, I became even more impressed with this serious shortage that is getting worse. When legislation was introduced in this last session that took control of the future development of the medical center from the legislature and gave it to the Board of Regents, I registered my objection. An elected legislature is more sensitive to the needs of the people of Kansas for more physicians.

Before registering my objection (with which the legislature almost unanimously agreed), I asked the administrators of our medical school why they couldn't enroll two classes a year as they did in the war years. I asked also why facilities at Wichita and elsewhere couldn't be utilized. They answered that the school at that time faced an emergency situation. Today we have an emergency situation that may be even greater. The medical school establishment must be impressed with this obvious fact. High grade applicants are in good supply—but we must have the means of training them for the medical needs of Kansas.

LELAND SPEER, M.D.

Representative, 33rd District  
Wyandotte County

## CORRECTION

Bristol Laboratories, Syracuse, New York, was omitted from the listing of Exhibits, page 193 of the April issue of the JOURNAL. Bristol exhibits each year at the annual meeting of the Society, and we wish to apologize for this error and thank the company for its continued participation in our annual meeting.



## *Personalities*—IN KANSAS MEDICINE

The city of Lenora will honor Edward F. Steichen on May 28, which has been designated "Dr. Steichen Day." Following a parade beginning at 2:00 p.m., a reception and program will be held at the Lenora High School. An invitation to attend the celebration is extended to members of the Society.

**Hubert H. Bell**, Kansas City, was recently selected as a fellow in the American College of Cardiology. Dr. Bell is a member of the cardiovascular department at KUMC.

The Award of Honor in recognition of outstanding achievement and devotion to duty in the field of college health was presented in March to **William Nice**, Topeka, by the Central College Health Association.

**Norman R. Harris**, Salina, and **Clarence A. Gilmore**, Kansas City, were installed as fellows of the American College of Obstetricians and Gynecologists at the group's annual meeting in San Francisco.

**Jack Walker**, Kansas City, has been appointed chairman of the new family practice department at the University of Kansas Medical Center. Dr. Walker has been associate dean since 1968.

"Drugs in Industry, Their Detection and Effects" was discussed by **Garry Porter**, Wichita, at the March meeting of the Wichita Association of Industrial Nurses.

**Leslie E. Becker**, Kansas City, has been appointed to the board of the recently created Providence-St. Margaret Health Center, Kansas City.

Members of the University of Kansas School of Medicine, **Herbert C. Miller**, **Ralph Kauffman**,

**Lester Lansky**, and **John S. Spaulding**, participated in a panel discussion on "The Hyperactive Child—Diagnosis and Treatment," at the March meeting of the Kansas City Association for Retarded Children.

**Hugh D. Riordan**, Wichita, has been appointed by the board of the Sunflower Guidance Center to serve as psychiatric consultant.

**Ralph Hale**, Wichita, was elected president of the American College of Allergists during the organization's 27th Annual Congress held in San Francisco in March.

**J. K. L. Choy**, Topeka, spoke and showed slides on his experiences on the Good Ship Hope at the March meeting of the District I, Kansas State Nurses' Association.

**Herbert C. Miller** and **Virginia Tucker**, members of the pediatric department at KUMC, participated in panel discussions at the annual meeting of the American Academy of Pediatrics in St. Louis in April.

Free diagnostic clinics for crippled children were held in Belleville and Garden City in May. **Bernard Joyce**, Topeka, and **Spencer McCrae**, Salina, conducted the clinic in Belleville. **John B. Jarrott**, Hutchinson, and **H. O. Marsh** and **Robert A. Rawcliffe, Jr.**, were in charge of the clinic at Garden City.

**Robert C. Polson**, Great Bend, has been elected chairman of the Regional Advisory Council to the Kansas Regional Medical Program. Members of the council include **Charles E. Brackett**, **Mahlon Delp** and **Leslie E. Becker**, Kansas City; **William J. Reals**, Wichita; **Joseph M. Stein**, Topeka; **Kenneth L. Graham**, Leavenworth; **Lee S. Fent**, Newton; and **Robert W. Weber**, Salina.



KANSAS STATE DEPARTMENT OF HEALTH  
TOPEKA, KANSAS

Epidemiology & Disease Control Services—Registration & Health Statistics Services—Kansas Morbidity  
Incidence

Summary of Cases Reported in February, 1971 and 1970

Diseases	February			January-February Inclusive		
	1971	1970	5-Year Median 1967-1971	1971	1970	5-Year Median 1967-1971
Amebiasis .....	—	4	1	2	4	3
Aseptic meningitis .....	—	1	—	—	1	—
Brucellosis .....	1	—	—	1	—	—
Diphtheria .....	—	—	—	—	—	—
Encephalitis, prim., infect. ....	1	—	—	1	—	—
Encephalitis, post-infect. ....	—	—	—	—	—	—
Gonorrhea .....	255	334	263	1,027	989	749
Hepatitis, infectious .....	74	42	29	117	72	56
Measles (Rubeola) .....	41	38	*	45	39	*
Meningococcal meningitis .....	4	—	4	11	—	9
Mumps .....	84	16	*	91	20	*
Pertussis .....	—	—	—	—	—	—
Poliomyelitis .....	—	—	—	—	—	—
Rheumatic fever .....	1	—	—	1	—	1
Rubella (German Measles) .....	57	6	*	61	8	*
Salmonellosis .....	28	8	15	38	15	30
Scarlet fever .....	8	17	8	18	54	18
Shigellosis .....	129	7	4	177	9	9
Streptococcal infections .....	151	170	197	221	292	506
Syphilis .....	62	92	80	200	210	200
Tinea capitis .....	4	5	4	7	9	7
Tuberculosis .....	11	17	16	21	29	29
Tularemia .....	—	—	—	—	—	—
Typhoid fever .....	—	—	—	—	—	—

\* Statistics not available for 5-year median.

### BACTEREMIAS ASSOCIATED WITH INTRAVENOUS FLUID THERAPY—USA

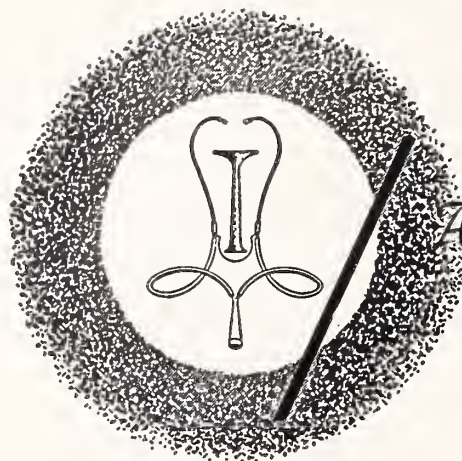
Between October 1970 and March 1, 1971, eight United States hospitals in seven states experienced 150 bacteremias caused by *Enterobacter cloacae* or Gram-negative organisms of the *Erwinia* group. There were nine deaths; all were associated with intravenous (IV) fluid therapy. The *Enterobacter* bacteremias in all hospitals were substantially increased as compared to previous time periods. Four hospitals which isolated and identified *Erwinia* had not previously encountered infections with these organisms. All eight hospitals utilize fluids and systems manufactured by Abbott Laboratories, which produces approximately 45 per cent of all IV fluids sold within the United States. In approximately 30 cases, the same organisms were isolated from blood cultures and contaminated in use IV fluids.

*Enterobacter cloacae* is occasionally encountered as an agent of bacteremia in American hospitals. However, unless fully speciated, this organism will not be identified. *Erwinia*, most well known as a plant pathogen, has only very rarely been isolated from human infection. *Erwinia* may be confused with members of the *Klebsiella-Enterobacter* group, and a rather detailed series of biochemical tests, with special emphasis on decarboxylase reactions, are needed to reliably differentiate the organism.

On March 24, 1971, the U. S. Commissioner of Food & Drugs, Dr. Charles C. Edwards, notified all hospitals and public health authorities that Abbott Laboratories IV products should not be used unless absolutely necessary. When IV therapy is necessary and products from an alternate supplier are unavailable the following special handling precautions should be employed with Abbott products:

1. Do not strike bottle caps.

(Continued on page 251)



## Announcements

*Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's CALENDAR. Notice of the session is posted in advance to allow the physician time to make preparations.*

### JUNE

- June 20-24 American Medical Association, Chalfonte-Haddon Hotel, Atlantic City. Write: E. B. Howard, M.D., Exec. Vice President, 535 North Dearborn, Chicago 60610.
- June 20-24 Woman's Auxiliary to the AMA, Traymore Hotel, Atlantic City. Write: Miss Margaret N. Wolfe, 535 North Dearborn, Chicago 60610.
- June 22-23 American Diabetes Association, Sheraton-Palace Hotel, San Francisco. Write: Mr. J. R. Conelly, Exec. Director, 18 East 48th Street, New York 10017.

### JULY

- July 16-17 Rocky Mountain Cancer Conference, Brown Palace Hotel, Denver. Write the Rocky Mountain Cancer Conference, 1764 Gilpin Street, Denver 80218.
- July 22-23 Second annual seminar in General Surgery, Colby College, Waterville, Maine. Write: Paul D. Walker, Jr., Director of Special Programs, Colby College, Waterville, Maine 04901.
- July 18-23 Third British Academic Conference in Otolaryngology, Edinburgh. Write: The Hon. General Secretary, John Ballantyne, 61 Harley Street, London W1N 1DD, England.

### POSTGRADUATE EDUCATION

University of Colorado:

- June 21-26 *17th Annual General Practice Review* (Estes Park)
- July 5-8 *Ophthalmology* (Colorado Springs)
- July 11-14 *Pediatrics* (Aspen)

July 20-24 *Internal Medicine* (Estes Park)

July 22-24 *Dermatology* (Aspen)

July 26-29 *Recent Advances in Rheumatic Diseases*—American College of Physicians (Estes Park)

For further information write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 East Ninth Avenue, Denver 80220.

July 23-29 *Chronic Inflammatory Disease of the Gut*, sponsored by the American Gastroenterological Association, Aspen, Colorado. Write: Mrs. Bernie C. Kern, 740 Krameria Street, Denver 80220.

### TWO NEW ARC BLOOD PROGRAM FILMS

The Armour Pharmaceutical Company has produced two films for the American Red Cross Blood Program. Interested groups should contact their nearest Red Cross chapter for information on obtaining either one for showing.

#### PRECIOUS TISSUE

Directed to an audience of physicians, medical personnel, and hospitals, this 10-minute color film dramatically shows the technical advances in the application of blood components and fractions. Actual filming of situations where the use of blood products play a vital role makes this an important informational vehicle in a highly complex field.

This film is not designed for general audience and if shown to lay groups, severe audience reaction may occur without prior explanation of what the viewer can expect to see. Both films are cleared for television showing.

#### BLOOD IS LIFE—PASS IT ON

Do you live in a closed "cube" when it comes to knowing about blood?



You may have some second thoughts about the world around you and the true attitudes of those who have never donated blood after seeing this new, 11-minute color film. Using a special technique that puts you at the scene, the film makers captured the essence of the confusion and misunderstanding that inhibits many people from donating blood. The film shows actual blood donation, how simple it is, and the time it takes. The film has already won the Silver Medal at the New York International Film and TV Festival for 1970, and stands ready to provide a strong tool for motivation of new donors.

## Medical-Legal Page

(Continued from page 246)

At trial, the physician testified that the first telephone conversation was not with the patient, but was with an unidentified woman. The physician said that he ordered that the use of all the drugs be discontinued, and that the patient drink baking soda water two or three times daily. He further testified that the second conversation was not with the patient's daughter, but with an unidentified woman. After confirming that the drugs had been discontinued, he said that he prescribed two antihistamines for the rash. The statements of the physician were supported by his medical records.

The physician also testified that he had used the same treatment on other patients with no adverse reaction. He also said that it was impractical, both medically and economically, to test all patients for possible adverse drug reactions.

Two physicians testified on behalf of the physician who was sued. The first said that there was nothing wrong with the treatment which had been prescribed.

The second physician was a specialist in internal medicine with a sub-specialty in gastroenterology. He testified that the treatment was proper, as was the use of the well-known and frequently used drugs. He also testified as to the impracticality of testing for drug reactions. He said that a physician must rely on the medical history given by the patient.

The trial court dismissed the lawsuit, and the woman appealed.

Affirming the dismissal, the appellate court ruled that the physician had exercised the degree of skill ordinarily employed by other members of the profession in the community, and had used reasonable care and diligence. Since the testimony as to the telephone conversations was conflicting, the court felt that greater weight should be given to recorded history which was evidenced by the physician's medical records.—*Slack v. Fleet*, 242 So.2d 650 (La.Ct. of App., Dec. 21, 1970)

## KMS Education-Information Activity Report, March 15-April 15

During this 30-day period, the agency processed and distributed five releases to the state's print and electronic media and the 165 legislators. Themes of the releases were:

1. The first pre-promotional story on the 112th annual convention.
2. The alarming spread of venereal disease within the state.
3. A follow-up on this story three days later to sustain public interest.
4. KMS peer review activities and its relationship to lower welfare cost.
5. An in-depth explanation of why conclusions from international vital statistics concerning poor health care in the U. S. are misleading.

Editor reaction to the two VD releases was uncommonly high. Dozens of newspapers editorialized on the epidemic condition existent and were favorable to the Society for alerting readers to the problem and for its activities in doing something about it.

Among editorials noted were those appearing in such important dailies as the *Hutchinson News* and *The Wichita Beacon*. The peer review activities also received excellent treatment and were monitored in publications subscribing to the United Press International Wire and the *Kansas City Star*.

During the 30-day period, plans were finalized to provide complete publicity coverage of the upcoming convention. And the agency began preparation of the next round of filler materials for the state's daily and weekly newspapers.

## Morbidity Incidence Report

(Continued from page 249)

2. Discard if not opened easily.
3. Do not replace caps.
4. Use solutions immediately upon opening.
5. At first suspicion of septicemia or fever likely associated with intravenous fluid, culture fluid and IV apparatus; seek assistance of health authorities if unable to identify for *enterobacter* and *erwinia*.

It is further recommended that in any IV therapy, the entire set-up should be changed at least every 24 hours.

Abbott Laboratories fully expects to solve the problem associated with the IV solutions which they supply, and will of course be allowed to re-enter the market as soon as they do. Meanwhile it should be kept in mind that some septicemias will continue to occur due to a wide variety of causes other than the specific problem discussed here.—*Morbidity and Mortality Weekly Report*, Vol. 20, No. 11, March 20, 1971.

# Woman's Auxiliary

Yoo-hoo, doctor! Yes, you in the white coat, the not-so-long haircut (well, most of you anyhow) and the dignified look. May I ask you a question? Is your wife an auxiliary member?

Please stop groaning and saying "oh, it's *you* again." You know you'd miss me if I weren't around. Besides, who would keep you informed about auxiliary doings? Which reminds me, IS your wife a member? Because if she isn't, she's missing a lot and we're missing a lot too. We want all of our doctors to be represented in the auxiliary, and according to our count, only about two thirds of Kansas doctors' wives belong. Since it's obvious there aren't that many bachelors and widowers, some of your wives aren't with us. Or "with it" either, in terms of auxiliary participation.

You know, some women have an idea that medical auxiliary isn't necessary, or any fun or helpful to anyone. Or they may think it's all work and no play, or even a lot of projects whose importance is debatable. This just isn't so. It was auxiliary women who put *Today's Health* on the map, pushing it through subscriptions until it became well enough known that people subscribed or bought it from news stands. It's the auxiliary women that have done ground work for more than one AMA-initiated project such as this.

Auxiliary members learn of your legislative needs and desires and then expend effort toward getting them accomplished whenever they can. It's auxiliary members who attend the various conferences on youth, old-age, safety and other health areas and represent you in presenting logical solutions to needs. It's auxiliary women who do the leg work in many important health projects, freeing you so that your time can be spent where it belongs—with your patients. (And sometimes with that all-important auxiliary member, your wife.)

So, is it any wonder that every member in the United States is asked to recruit new members and to get members who may have dropped out interested again? We LIKE to do your leg work, and we're told that most of us have remarkably efficient, and maybe even good-looking, legs.

We like to do other things, too. We enjoy our social meetings or semi-social ones, where we get together for both business and pleasure. We make the most of our time and effort that way through little things like auctions, food sales, card parties, dances, or any project where we work side by side.

Working with auxiliary is especially nice when it includes our husbands, or when conventions and workshops roll around. There probably isn't any group anywhere that has so much fun just being together and accomplishes so much at the same time. And didn't we have a blast at Topeka? Oh, *love* those singing doctors!

What I'm trying to say is, if your wife isn't already sold on being an auxiliary member, how's about *you* selling her on auxiliary for us? We are working for your interests. 'Course your interests are our interests, sort of like that chicken and egg bit. But we can't do it without everyone's help.

Which reminds me . . . "Isyourwifeamember, isyourwifeamember, isyourwifeamember?"

You're not married? Well, why don't you get married, and after your bride repeats those solemn vows to "love, cherish and join the medical auxiliary," have her send in her dues and be a member of one of the most exclusive organizations in the country, for doctors' wives only . . . our medical auxiliary.

Yours,

Auxiliary Annie

P.S. See you in Atlantic City.





# Surgical Self-Assessment Program

## To Debut in the Fall

The American College of Surgeons, in cooperation with the National Board of Medical Examiners, has virtually completed its preparations for a program designed to help its Fellows (members) and other qualified Doctors of Medicine evaluate the extent of their basic and clinical knowledge of surgery. Ahead of its schedule for construction of questions, establishment of an administrative mechanism, and for printing the necessary material, the program is expected to be available for interested participants early in the fall of 1971.

The Surgical Education and Self-Assessment Program (SESAP) was initially recommended by the Board of Regents of the College, and subsequently developed by its Committee on Continuing Education under the chairmanship of James V. Maloney, Jr., M.D., F.A.C.S., Department of Surgery, UCLA Medical Center, Los Angeles. The National Board of Medical Examiners and 44 nationally recognized leaders in general surgery and the surgical specialties assisted the Committee in working out program content and administrative details.

The purpose of the program is to offer a device by which participants can accurately measure how well they have kept up with surgical progress, define the areas in which they may be deficient, and plan a continuing education program matching their individual needs. Moreover, the program is designed not only to pinpoint for the participant his own position in the arena of today's surgical knowledge, but also to allow him to measure his own progress against the progress of his peers.

The key part of the program consists of a questionnaire containing 750 clinically oriented, objective questions. They are offered in the multiple choice fashion. Covering nine areas, they provide for the practicing surgeon a means for self-evaluating his basic and clinical knowledge in the broad field of surgery. Considerable emphasis is on that body of knowledge which has been developed since the practicing surgeon completed his residency five, ten, or more years ago, and which is essential to the practice of surgery in *all* specialties. No attempt is made to examine in depth the individual specialty areas.

The nine areas covered by the assessment program are: (1) cardiovascular and respiratory, (2) musculoskeletal and neurosurgery, (3) skin, breast, and burns, (4) gastrointestinal, (5) genitourinary and gynecology, (6) metabolism, shock, and endocrine surgery, and (7) head, neck, ear, nose, throat, and ophthalmology.

In addition, questions on cancer and trauma are distributed throughout these seven areas, and will be evaluated both in their special area and separately as cancer and trauma questions.

A participant may select study areas according to his individual needs and interests. References to easily accessible source literature will be furnished together with the questions, both to help the participant determine the accuracy of his answers, and to serve him as a guide to further studies, particularly in areas where he finds himself to be deficient. An annotated bibliography covering recent material thought to be of value to all surgeons will also be included.

The test is estimated to require ten to 20 hours for completion. There is no passing or failing grade since the body of knowledge covered in the program is not equivalent to knowledge units as presented in a formal teaching course.

Answers will be computer-scored by the National Board of Medical Examiners, and the scores will be returned to participants by an agency bonded to insure complete confidentiality of test results.

Anonymity of the participants and complete confidentiality of test results are key features in the design of the program. After a physician has notified the College that he is interested in participating in the program, he will receive a descriptive brochure and an application for participation. Together with the application and fee he will send to the bonded mailing agency two address labels on each of which he will give an address of his choice. One of these labels will be used by the agency to send him the assessment package, together with an identifying code number; the other to return to him the coded and corrected answer sheet. Answers will be scored by NBME on the basis of code numbers. Only the bonded mailing agency will have access to both names and code numbers. All answer sheets will have to be submitted by a specific deadline if scores are desired.

All Doctors of Medicine—including residents in training—are eligible to participate in the Surgical Education and Self-Assessment Program of the American College of Surgeons. The fee for Fellows, members of the ACS Candidate Group, and residents is \$35, for non-Fellow Doctors of Medicine \$60.

Further information about SESAP may be obtained by writing to Harold A. Zintel, M.D., F.A.C.S., Assistant Director, American College of Surgeons, 55 East Erie Street, Chicago, Illinois 60611.

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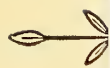
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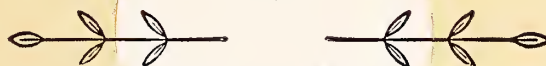
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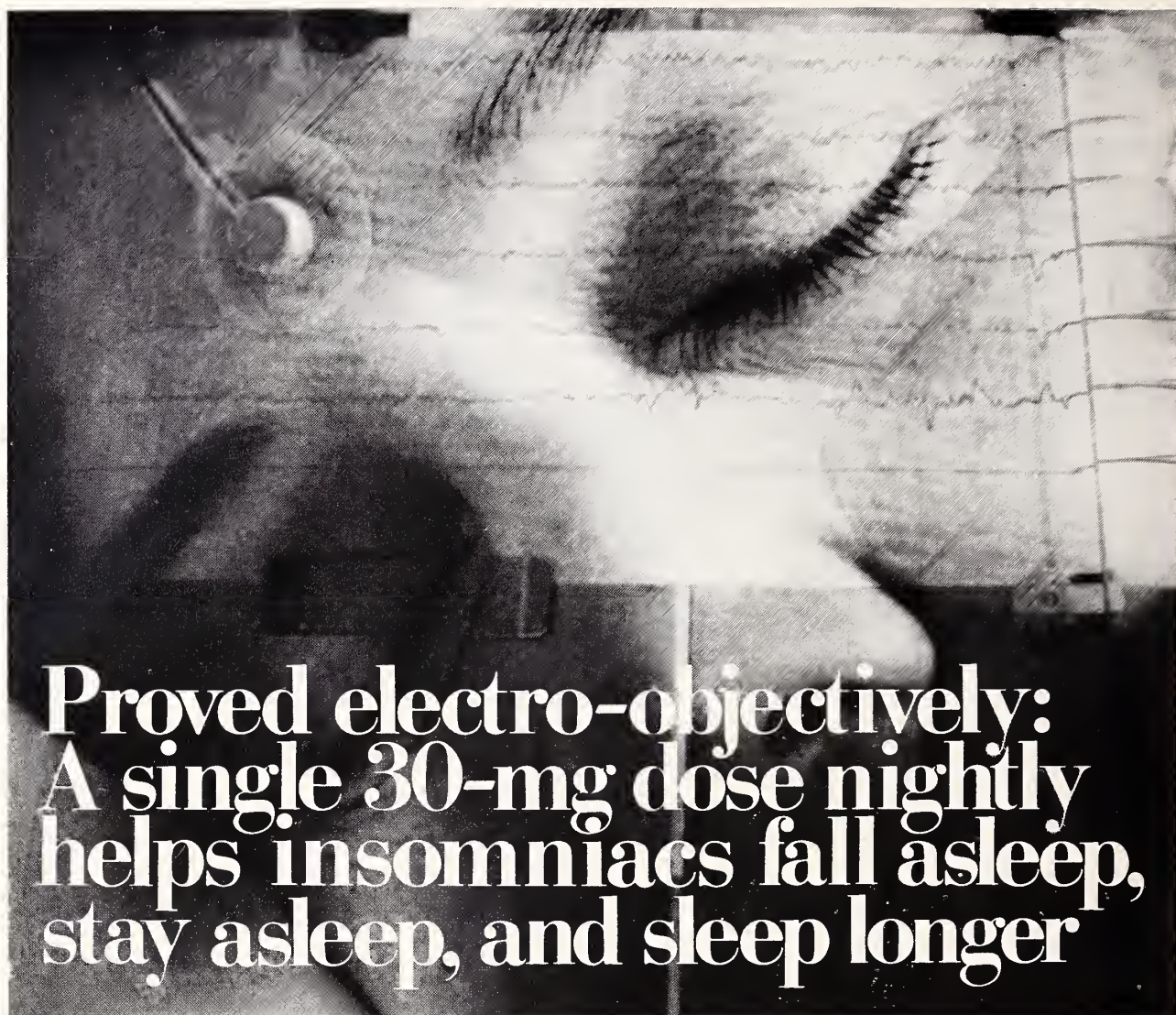
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VOL. LXXII  
NO. VI





# Proved electro-objectively: A single 30-mg dose nightly helps insomniacs fall asleep, stay asleep, and sleep longer

Controlled studies of 23 insomniac and 13 normal subjects treated with Dalmane (flurazepam HCl) in five sleep laboratories generated over 4000 hours of electroencephalographic, electro-oculographic and electromyographic tracings. These studies revealed that Dalmane 30 mg nightly usually induces sleep in 22 minutes and provides seven to eight hours of sleep.<sup>1,2,3</sup>

Moreover, Dalmane 30 mg was found to be useful in all common types of insomnia in which it was studied. Of drugs studied in a sleep laboratory,<sup>1</sup> Dalmane 30 mg was the only one that consistently reduced sleep induction time and maintained sleep nightly for 14 consecutive nights of use.

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## Confirmed clinically

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Fifty-three controlled studies using a paired-night, double-blind crossover design have evaluated Dalmane clinically. In the majority of these, Dalmane (flurazepam HCl) significantly reduced sleep induction time and increased sleep duration. Dalmane and a placebo were alternated on successive nights in 2010 insomniacs, 1706 of whom were studied for a single night-pair, and the remainder for as many as fifteen paired-nights. A patient preference for Dalmane was apparent in the paired-night studies.

Dalmane was also preferred to certain hypnotics in two separate preference studies. In each of two double-blind studies, Dalmane 30 mg retained effectiveness for the total period of seven consecutive treatment nights, according to subjective/objective evaluations.

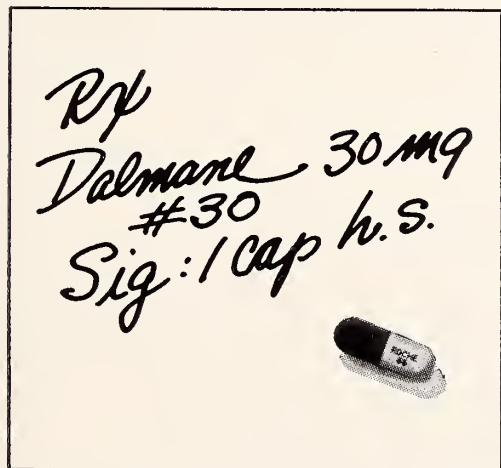


In summary, Dalmane is useful in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening. It can be used effectively in patients with recurring insomnia or poor sleeping habits, and in acute or chronic medical situations requiring restful sleep.

### Dalmane (flurazepam HCl) is generally well tolerated

In most instances in which adverse effects with Dalmane were reported, they were mild, infrequent and seldom required discontinuation of the drug. Dizziness, drowsiness, lightheadedness and the like were the side effects most frequently noted, particularly in elderly or debilitated patients.<sup>3</sup> Instances of hepatic dysfunction, paradoxical reactions (excitement) and hypotension are rare with Dalmane, and morning hang-over is relatively infrequent. In studies to date the effectiveness of Dalmane for recommended periods of use is maintained without need to increase dosage.

**References:** 1. Kales, A., et al.: "Effectiveness of Sleep Medications: All-Night EEG Studies of Hypnotic Drugs," in Proc. 7th Internat. Cong. Electroencephal. and Clin. Neurophysiol., San Diego, Calif., Sept. 13-19, 1969. 2. Kales, A., et al.: "Psychophysiological and Biochemical Changes Following Use and Withdrawal of Hypnotics," in Kales, A. (ed): *Sleep: Physiology and Pathology*, Phila., Lippincott, 1969, p. 331. 3. Data on file, Medical Department, Hoffmann-La Roche Inc.



For the sleep your patients need

New **Dalmane**<sup>®</sup>  
(flurazepam hydrochloride)

**Before prescribing, please consult Complete Product Information, a summary of which follows:**

**Indications:** Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; and in acute or chronic medical situations requiring restful sleep. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended.

**Contraindications:** Known hypersensitivity to flurazepam HCl.

**Warnings:** Caution patients about possible combined effects with alcohol and other CNS depressants. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Use in women who are or may become pregnant only when potential benefits have been weighed against possible hazards. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage.

**Precautions:** In elderly and debilitated, initial dosage should be limited to 15 mg to preclude oversedation, dizziness and/or ataxia. If combined with other drugs having hypnotic or CNS-depressant effects, consider potential additive effects. Employ usual precautions in patients who are severely depressed, or with latent depression or suicidal tendencies. Periodic blood counts and liver and kidney function tests are advised during repeated therapy. Observe usual precautions in presence of impaired renal or hepatic function.

**Adverse Reactions:** Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported were headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations and elevated SGOT, SGPT, total and direct bilirubins and alkaline phosphatase. Paradoxical reactions, e.g., excitement, stimulation and hyperactivity, have also been reported in rare instances.



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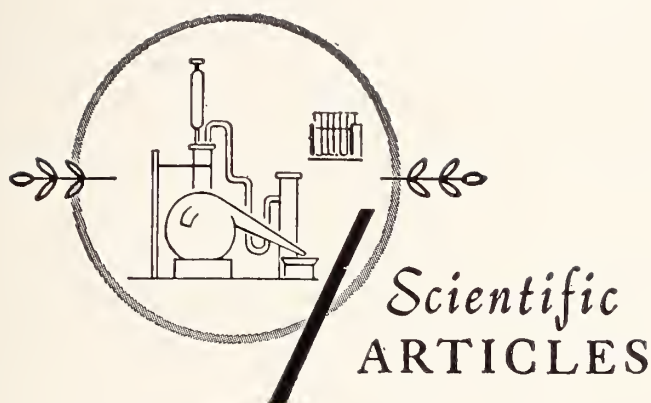
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# Health Care

## *Problems in Community Health Organization*

E. D. LYMAN, M.D., M.P.H.,\* *Topeka*

EARLY IN HIS PROFESSIONAL CAREER John D. Rockefeller, Sr., recognizing the need to put his philanthropies upon a systematic scientific base, employed the services of Frederick McKay, a Baptist minister. It was this gentleman who counseled the Board of Directors at its first meeting that each would be asked only one question on Judgment Day—What had he done as a trustee of the Rockefeller Foundation?

No one on the Board knew exactly how to attain the goal of the Foundation but all agreed upon the goal—to bring about better international understanding and harmony among the peoples of the world.

Dr. McKay made that discovery for them during a prolonged summer vacation in New England. Among the books he had taken with him was a copy of Osler's *Practice of Medicine*. Osler, of course, is identified as the Dean of American Medicine, even to the present day. McKay was more impressed by the shortcomings of medicine rather than by its glories, and herein he felt lay the field in which to invest the Rockefeller wealth.

How could these comparatively limited resources, however, allay the world's suffering from disease? The Foundation quickly realized that the focus must

be placed upon research, education, and application of techniques known to preventive medicine. Any other course would dissipate the Foundation's resources in a very short time.

In order to demonstrate what could be done to benefit mankind through preventive medicine, technical advisors recommended that a specific disease be selected for control in accordance with criteria agreed upon in advance. These criteria were:

1. That the cause and mode of transmission of the disease be known.
2. That the disease afflict a large percentage of the population to the degree that it recognizably affected the economy of the area adversely.
3. That the disease could be controlled and eliminated by simple inexpensive preventive measures.

In casting about for such disease, it was decided that hookworm in the South met all the criteria. A campaign was launched, based largely upon education to interrupt the breeding of the parasite by building pit privies and wearing shoes. The results had such dramatic economic impact that the peoples of the South have continued to invest heavily in public health services. Today such services are found to be more widespread and highly developed in the South than in any other section of the country.

Unfortunately, the lessons inherent in this undertaking have too often been misunderstood, ignored, or forgotten. It was not lost on such as our fellow Kansan, Dr. Crumbine. He was one who

\* Executive Secretary and Health Director, Kansas State Department of Health.

Presented to the Kansas Chapter, American Society for Public Administration, January 12, 1971.

understood where emphasis should be placed in coping with disease.

Did this experiment in disease control and the larger effort of the Rockefeller Foundation actually bring about a better understanding among the nations? Those who look for definite proof will not find it; those who realize the importance of basing human relationships on trust, respect, and mutual confidence have at least a basis for hope.

Today, over 120 nations of the world are bound together in a health alliance—the World Health Organization (WHO) with headquarters in Geneva, Switzerland. It and its member nations have subscribed to the definition that "Health is a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity." This definition stresses the fact that health is a positive state—not an accidental phenomenon. Rather, it becomes a predictable resultant of action taken in behalf of the individual by oneself, one's family and employer, as well as one's community. Health is attained, as is education, through individual and community effort. In such light, disease, as ignorance, may be viewed as the natural state of man.

As the benefits of health and medicine have increasingly become more apparent, the appetite for both health and medical services likewise is growing. Nor can one be blamed for wanting to share fully in such benefits. At the national level, public officials have sensed these desires and legislation has been readily forthcoming. At state and local levels, officials have been less responsive for a good number of reasons. Opportunities to advance vital community services relating to city planning, housing, safety, traffic flow, educational and recreational facilities have often been lost for failure to emphasize the health components inherent in such programs.

But the feeling that health is indeed a right has become accepted and we can, therefore, look forward to early adoption of a national health program comparable to Medicare, and particularly to the Kaiser-Permanente program which stresses comprehensiveness, co-ordination, and continuity of care, with emphasis upon health promotion and health maintenance. The present economic structure for financing health and medical services has encouraged disease and deception by consumer and professional alike. Those with knowledge of how to reduce per unit costs of service have met frequently with discouragement.

The concept that health is a right deserves greater elaboration. Will and Ariel Durant have defined a right in their last book, *Lessons of History*, as "neither a gift of God nor nature but as a privilege which it is good for the group that the individual should have." In this sense health as education may classify as a right.

The concept of right rests on two other basic premises. First, health is indivisible. A community can no more be healthy if any of its members are diseased than can a man suffering from disease or malfunctioning of any of his organs. Second, disease is never wholly a personal matter for in one way or another it affects the individual, his family and his community.

Whatever implications health and medical services have for improvement of better international understanding, they hold the same implications for improved understanding at both state and local levels. But no understanding will be possible until services are implemented at the local level, as so magnificently demonstrated by the Rockefeller Foundation through toilet seats and shoes!

I have elected this evening to speak on "Problems of Community Health Organization," but any discussion of problems is meaningless without delineation of goals. Problems are mere obstacles to attainment of goals but their elimination does not assure arrival at the goal.

Social effort, of which community health organization is but a part, has but a single goal, namely, the cultivation, preservation, and release of the humanity of mankind. Anything that denies mankind from expressing his humanity denies the value and preciousness of life. Many are the obstacles serving to prevent fulfillment of the individual, and not least are those relating to his health.

The health sciences and arts attempt to assist mankind in attaining and expressing his humanity. Inherent in each component of the prevention—treatment—rehabilitation spectrum is an element to achieve that goal.

Community health organization must consider every phase of this spectrum which, in greater detail, includes: health promotion, health protection, disease prevention, disease detection, diagnosis, treatment, convalescent care, restoration of function, and rehabilitation.

Health problems are ever-changing, never the same from one generation or decade to the next. None has ever been completely eradicated—at best only eliminated. The solution of one gives birth to at least one more. The control of infectious and communicable diseases has preserved millions of people that they may be afflicted with chronic degenerative diseases of old age.

I should like to discuss the problems or obstacles to our goal under four headings—each of which, of course, relates directly or indirectly to community health organization.

### Specific Personal Health Problems

We may list under this heading the whole gamut of physical, mental, and social diseases which plague



man from birth to death. The International Classification of Disease, by which deaths and diseases are categorized, lists well over a thousand individual illnesses under 17 major headings.

Each of these constitutes a personal health problem and, in a way, a community health problem. The task of the community is to ascertain to what extent does each make up a community health problem. No single guideline can be employed to make this determination and assign priorities. Death certificates outlining cause of death, and contributing factors thereto, have long been employed to measure health problems and the so-called health status of the community. Such certificates remain a useful adjunct but are, by themselves, woefully inadequate.

Much disease, as mental illness, upper respiratory infections, dental illness, and myopia elude measurement via the death certificate.

We then are forced to secure data from other sources such as surveys, school reports, hospital and clinic records, military examinations, and individual medical reports. Many sources are involved, yet the information is not comprehensive nor coordinated. The need for centralization of statistical health information in data banks is obvious if resources present and potential can be brought to bear on needs associated with these problems.

The task of local and state health departments is to define these problems, propose solutions acceptable to the community, and assist in implementation of programs designed to aid in their solution. The health department's patient is the community, and in order to deal effectively with his illnesses the department must violate the injunction guiding private physicians not to discuss the patient's illness publicly.

Public sentiment so essential to public action, however, cannot become effective if the public is not kept informed of the facts.

A serious problem in the identification of personal health problems as one of public concern, is the ranking of disease by importance. Non-life threatening afflictions involving large segments of the population often lack the drama needed to arouse the public to action. The public mind is more likely to be stimulated by the spectacular life-threatening illnesses affecting only a few.

At a recent legislative hearing on catastrophic disease the point was made that all disease is catastrophic in its own way. With some the "downward" turning is so abrupt and precipitate as to be easily recognized, whereas with others it proves far more insidious. Anyone can recognize the catastrophe of renal failure, mental retardation, and congenital heart defect. But visual impairment left unattended in the school child prevents his profiting maximally from his exposure to education. It may result in

behavioral problems, disruption in the classroom, and eventually in dropping out of school. One whose formal education is prematurely terminated cannot be considered the fully developed asset he could have been to himself and his society. Dental disease rarely leads to death, but as the most prevalent disease of Americans has been a major contributor to lost productivity and dependency.

As the cost of all disease, whatever the cause, is hidden in the price of every product and service sold, it is to the benefit of society to establish and maintain control programs at the prevention level wherever and whenever possible.

The problem then as far as it relates to community health organization is one of defining specific health problems, establishing priorities and developing community understanding, support and commitment to a program of action.

A final word on personal health problems should be directed toward those emanating from the self-destructive urge characteristic of human beings. Much can be done to protect the health of people through community health programs, such as immunization, water and food sanitation, and waste disposal, but the limits are defined. The frontier today largely is that which relates to one's own behavioral practices as overeating, drug abuse in its entirety, alcoholism, cigarette smoking, promiscuity, speeding, and overt suicide which can only be dealt with successfully by inculcating in our children and ourselves a respect for life—our own as well as others. This is a Herculean task which we may not be able to surmount.

### **Unnecessary Pressures Contributing to Specific Personal Health Problems**

Man cannot escape his environment and his environment, internal as well as external, is inextricably related to his physical, mental and social well-being.

Substandard housing and neighborhoods, overcrowding and lack of privacy, pollution of the land, air, and water, and accessibility to needed goods and services, including health and medical care, work singly and together to man's detriment. Whether the pressure of such negative forces is recognized or not the effect and results are largely the same.

Much concern has been recently evidenced relative to matters of the environments, but how prepared man will prove to be to act is questionable still. Men's desires vary in nature and intensity. He doesn't want a sewerage system for his house, or a refuse collection system for his solid wastes, or abatement of noise in exactly the same way he wants a new car. He works on his environment spasmodically—only when conditions become so bad as to

cross his particular threshold of intolerance. Cars, like most material goods, on the other hand, are bought on impulse long before the present one has actually become intolerable—except esthetically and emotionally.

Much of man's concern about the environment is in those matters he does not really comprehend, as mercury levels in fish, and radiation hazard from the salt vaults near Lyons. Perhaps, his concern stems more from fear of the unknown than from any actual concern for the environment *per se*. In matters he does understand, such as litter, garbage and trash, and air pollution from tobacco, he procrastinates.

The environment is exceedingly complex. Besides the physical, there exists the social environment which has far-reaching effects on the physical, mental, and social well-being of people. Many of us become involved in unhealthy behavioral practices because of social pressures exerted upon us, which all too often, we in turn direct toward others.

Environmental pressures, physical and social, can serve then to accentuate the personal health problems of people.

Political unresponsiveness in coping with environmental pressures merely compound the problem for the citizen and constitutes in itself an unhealthy pressure.

### Administrative Problems

The tragedy of medicine and the society it reflects is that much more is known about health and the prevention and treatment of disease than we are willing to put into practice.

With enactment of the Partnership in Health Act of 1966 (P.L. 89-749) the mechanism for national identification of health problems and assignment of priorities has been greatly enhanced. In the absence of such a mechanism the problems of community health organization would be beyond our capabilities.

Under this legislation, state and area-wide councils for Comprehensive Health Planning have been established which assures that the consumer, as well as the provider, may be heard. Fifty-one per cent of the membership of such bodies must be comprised of consumers—those who are not employed as providers of health services. Participation of the consumer on such councils should result in his becoming a more knowledgeable purchaser of personal and community health services. Professionals will be advantaged thereby in shaping an improved and more acceptable product.

The aim of Health Planning Councils is to see that health services for all people are comprehensive, coordinated and continuous—free of fractionation, gaps in service, and unnecessary duplications.

Hopefully, planning in the health field can also assure the development of adequate resources in terms of manpower, facilities, finances, organization, and program.

Each of these areas should be examined in detail but time permits selection of only a few examples.

With enactment of Medicare and Medicaid in 1965, opportunity presented itself to establish and expand home health care services in this country so as to provide home nursing services to all citizens of our communities. In this way, needed health services could be provided people in their homes. In the absence of home nursing services, many persons are either neglected or endure unnecessarily prolonged hospital or other institutionalization. Hospital beds costing thirty-five to fifty thousand dollars apiece to build and equip should be reserved for other uses than to meet the convenience of physicians and families.

In Kansas, citizens in only 37 of our 105 counties have such services available to them. In 68 counties home nursing service is non-existent.

In accordance with the Booz-Allen & Hamilton Report of 1968 which proposes the establishment of several local health service districts in the state, legislation is being prepared for creating ten to twelve local health regions for introduction before the 1971 legislature. Regionalization can be approached in two ways. State government may establish regional offices, or local government may join in a regional setup. The latter would assure program development commensurate with local desires, needs, and abilities, and enhance responsiveness and acceptability of program. Regionalization will expedite establishment of home health care services so that they are available throughout the state to all our citizens.

With regionalization of local health services, new needs for manpower can be anticipated. Regionalization, of course, is proposed, recognizing the fact that six to ten local health officers (one to serve each region) are more likely to be recruited than 105 county physicians. Regionalization will serve to place scarce health personnel at the local level where the action is and where service becomes truly meaningful. Nursing personnel, however, forms the backbone of community health services so the supply of nurses must be examined.

Approximately one third of the licensed nurses of Kansas are not working as nurses today. Some have legitimate reasons, but others are not working because no opportunity exists in their community along their particular lines of interest and talents. As physicians retire and leave the smaller communities of Kansas, nursing opportunities dry up. The nurse, who is married, is not free to move elsewhere.



In each of 96 counties there exist today five or more nurses who are not working as nurses. In only one county is there no nurse not working as a nurse.

These persons provide a reservoir to meet the demand for community or public health nursing staff. Before expanding training programs for more nurses, we should be working to develop employment opportunities for nurses who are merely awaiting a chance to work.

Another reservoir for vitally needed health personnel is the marginal or non-producer so often relegated to the ghettos about the center city. Training programs have been developed which have tapped this reservoir and demonstrated a potential undreamed of but a short time ago.

Many problems, of course, are ancillary to staffing—not least of which are unimaginative and regressive personnel and budget policies.

Health is a field where individuals should not be dead-ended professionally and financially. Frustrations associated with such systems constitute serious health problems in themselves. In the field of health we cannot afford policies which stifle professional competence and conscience.

Administrative problems are the true challenge before us today in the field of Community Health Organization. No field of endeavor presents the fertility as does that of community health to the public administrator. His efforts will prove most effective only as he realizes and keeps constantly in mind that people (the more highly trained and experienced the better) constitute the single most valuable resource available to him. I shall only mention the challenge before us to coordinate and concentrate the resources and efforts of federal, state, and local government upon problems at the local level.

### **Philosophical and Conceptual Limitations**

These provide the greatest obstacle to reaching our stated goal.

How important is life, what priority should be given health and medical services, how deep is our commitment, and how broad is our grasp of understanding will determine the course we take and how far we go in meeting the health and medical care needs of ourselves and of our society.

Philosophical and conceptual limitations are the greatest obstacles encountered among the many faced in the field of Community Health Organization. Such limitation impairs our abilities to deal effectively with other obstacles, previously discussed, standing in the way of our goal. With the solution

to these last which, indeed, is a dream, all our problems would be resolved, but as so beautifully stated by Loren Eiseley, "Man would not be man if his dreams did not exceed his grasp."

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### **K.U. INCREASES NUMBER OF MEDICAL STUDENTS**

The size of the entering medical class at the University of Kansas School of Medicine will be increased by 15 students this fall. The fifteen additional students will join 129 others who have already accepted positions in the entering class which begins studies August 30, 1971. This constitutes a record total of 144 students for a single medical student class at the University of Kansas School of Medicine. The students will be named from well-qualified Kansas applicants for whom places had not yet been found.

This extraordinary and difficult decision is a response by the School of Medicine to the urgent need for increased physician manpower in Kansas, and for increased educational opportunities for the large number of well-qualified Kansans who have not been able to find places in medical school this year. The action was recommended unanimously by the Executive Faculty of the School of Medicine, which expressed its concern for these problems, and which will encourage these additional students, as well as all the others, to practice in Kansas.

The increased class size will be possible by using temporary and emergency measures, pending long-range solution of the space problems at the Medical Center. For example, temporary classrooms will be constructed, placed adjacent to the basic science building. These temporary measures will be assisted by a federal grant.

The Kansas Board of Regents, Legislature and Governor Docking responded favorably, in the recent legislative session, to long-range plans for alleviating health manpower shortages, as presented in a 3 volume report to the Regents by the University of Kansas School of Medicine. The School of Medicine expressed appreciation for this support, and the extraordinary effort required to start training more physicians even sooner than planned is the school's response to the urgent needs.

Part of the program proposed by the school is an accelerated curriculum which allows students to graduate in three calendar years. The 144 students entering this August can, if they so desire, graduate in 1974. This acceleration will therefore essentially graduate an entire class of students that year.

# Sarcoidosis

## *Pulmonary Sarcoidosis in the Midwest*

JAMES K. FISHER, M.D., *Kansas City, Missouri*

THE CASES OF PULMONARY SARCOIDOSIS at the University of Kansas Medical Center (KUMC) between 1950 and 1969 and at St. Luke's Hospital of Kansas City (SLH) between 1953 and 1970 were reviewed. Only those cases which were confirmed by tissue and clinical diagnosis, and those cases with the characteristic clinical picture of sarcoidosis but without a definite positive tissue biopsy diagnosis, were included in the study. Seventy-one cases are included: 44 from KUMC and 27 from SLH. Thirty-seven of KUMC's 44 cases (84%) were proven by biopsy, as were 23 of the 27 cases (85%) at SLH. The majority of biopsy procedures were either open lung and hilar node biopsies or excisional procedures of a peripheral lymph node. The data collected forms the basis for this paper.

### Results

The ages of the patients ranged between 20 and 67 years of age, the majority of whom were between 20 and 50 years old. The average age at the time of diagnosis was 39.4 years for KUMC patients and 39.8 years for SLH patients. Forty-five females were involved in the study, 29 from KUMC and 16 from SLH; there were 26 males, 15 and 11 from each institution respectively. Of the 71 cases, only 14 were Negro, 13 of whom were females (*Tables 1 and 2*).

The patients presented themselves to the hospitals for various reasons. Thirty-six per cent were admitted at KUMC with an abnormal chest x-ray only, whereas the figure was 26 per cent at SLH. Respiratory complaints were the majority of symptoms obtained (*Tables 3 and 4*). Other less frequent complaints were enlarged exocrine glands, fever, skin lesions, hemoptysis, ocular lesions, hepatomegaly, enlarged lymph nodes, congestive heart failure and central nervous system symptoms.

Each patient had a physical examination, but surprisingly 45 per cent and 44 per cent of the patients from KUMC and SLH respectively showed no physical abnormality. The majority of findings were respiratory tract findings and lymphadenopathy (*Table 5*). Only one patient had erythema nodosum.

Laboratory examination only helped to strengthen the diagnosis of sarcoidosis, eosinophilia, hyperglobulinemia and hypoalbuminemia being the most helpful. A certain degree of anergy could be demonstrated (*Table 6*).

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Sarcoidosis is a disease of world-wide distribution occurring most commonly in the temperate zones of northern Europe and the eastern United States.<sup>1, 2</sup> It is therefore understandable that practically all the literature on this disease comes from these areas. However, when reviewing a number of patients with this disease entity from the midwest, who presented themselves at the University of Kansas Medical Center and at St. Luke's Hospital of Kansas City, it becomes apparent that certain aspects of the disease are not substantiated in this area as compared to other areas of the world where the disease is more prevalent. It is therefore the purpose of this paper to present data on the presentation of sarcoidosis in the midwest which may differ with studies done elsewhere. With this in mind, and although this is a small study, perhaps the recognition of sarcoidosis in this area might be more accurately made.

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Each patient's disease was staged according to the x-ray findings in the chest. The staging was based on Heilmeyer, Wurm, and Reindell's classification of 1956.<sup>3, 4</sup> Their system divides pulmonary sarcoidosis into three stages. Stage I involves only hilar and mediastinal adenopathy. Stage II is concerned with specific pulmonary parenchymal changes, and Stage III contains mixed sarcoidosis and fibrocystic or degenerative pulmonary parenchymal changes (*Table 7*).

### Comment

The incidence of pulmonary sarcoidosis is between 3.5 and 140 per 100,000 population in the most prevalent areas.<sup>1, 2, 5</sup> The low number of cases (71) presented in this study is understandable since the incidence of sarcoidosis per capita in the midwest is apparently so low. The population concentrate in the midwest is also small. It has been reported that



TABLE 1

	KUMC	SLH
Average age at Dx .....	39.4	39.8
Age range .....	20-67	23-59
Sex:		
Female .....	29	16
Male .....	15	11
Race:		
White .....	31	26
Negro .....	13	1

the peak prevalence is in the third decade of life, occurring rarely before the age of 18 and infrequently after age 50.<sup>6</sup> The age of the patients in this study reflects the higher incidence of older age groups in the midwest. The white male-to-female ratios of 1:1 essentially agree with other studies, as does the Negro female-to-male predominance. However, the ratio of Negro cases (14) to white cases (57) far underscores the figures reported in the literature of 15-18:1.<sup>1</sup> This, too, reflects the difference of race in the midwest population. It is also of note that KUMC is a "state" institution while SLH is a "private" hospital.

The majority of patients in this study were symptomatic; KUMC, 64 per cent of patients, and SLH, 74 per cent. Both of these percentages differ from previously reported values only slightly.<sup>2, 7, 8</sup> Very few had complaints other than those related to intrathoracic sarcoidosis. Of the symptoms elicited, cough, dyspnea, weakness-fatigue, and chest pain were the most common complaints. Approximately 45 per cent of the patients in both hospital groups had no physical findings while others showed mainly respiratory findings or lymphadenopathy. It must be mentioned, however, that clinical signs and symptoms are often absent or small in contrast to the marked radiographic changes which may occur.

Laboratory results showed that 40 per cent of the patients had an eosinophilia of 5 per cent or greater, although only two of those tested had any evidence of an abnormal calcium metabolism. The reported incidence of 5 per cent or greater eosinophilia

TABLE 3

Reason for Hospitalization	KUMC	SLH
Seen for an abnormal x-ray	16(36%)	7(26%)
Seen for symptoms .....	28(64%)	20(74%)
Seen for respiratory symptoms	26(59%)	12(44%)

TABLE 2

Sex	White	Negro
Female:		
KUMC .....	17	12
SLH .....	15	1
Male:		
KUMC .....	14	1
SLH .....	11	0

is no more than 20 to 30 per cent, as is minimal elevation of serum calcium levels.<sup>1, 6</sup> Hypercalcinuria is supposedly more frequent and is reported to occur from 29 to 50 per cent of the time.<sup>9</sup> Suppressed skin test reactions upheld the anergy which exists in sarcoidosis; however, it should be mentioned that positive tuberculin, histoplasmin and mumps skin tests, especially in the later stages of the disease, do occur and by no means rules out sarcoidosis. It is also interesting to note that one patient had cultures taken from hilar lymph nodes which grew out atypical mycobacterium. This same patient had a positive biopsy report which proved sarcoidosis. This supports Mankiewicz and Chapman's theory and findings for an etiology of sarcoidosis.<sup>1, 5, 10-12</sup> Serum protein aberrations occur from 50 to 80 per cent of the time, but are usually of no diagnostic value.<sup>1, 2, 6, 8, 13</sup> In the midwest, elevation of globulins, mainly the gamma fraction, is the most common serum abnormality. A 33 to 35 per cent, occurrence of a non-specific hypoalbuminemia did exist.

The patients' chest x-rays demonstrated every phase and aspect of intrathoracic sarcoidosis, from hilar adenopathy and pulmonary parenchymal infiltrates to pulmonary parenchymal degenerative changes. At KUMC the majority of patients, or 73 per cent, were Stage II disease; while at SLH, 93 per cent of the patients were almost equally split between Stage I and Stage II disease. Since the course of the disease is rather a benign one, few of the patients exhibited progressive disease on a Stage III chest x-ray.

TABLE 4

Symptoms	KUMC	SLH
Cough .....	24/44(55%)	9/27(33%)
Dyspnea .....	21/44(48%)	8/27(30%)
Fatigue-weakness ...	11/44(25%)	11/27(41%)
Chest pain .....	10/44(23%)	11/27(41%)
Weight loss .....	8/44(18%)	3/27(11%)
Arthritis .....	2/44(4.6%)	6/27(22%)

TABLE 5

Physical Findings	KUMC	SLH
None .....	20/44(45%)	12/27(44%)
Chest findings .....	16/44(36%)	6/27(22%)
Palpable lymph nodes	13/44(30%)	9/27(33%)
Skin lesions .....	3/44(7%)	2/27(7%)
Hepatomegaly .....	0/44(0%)	3/27(11%)
Arthritic changes ...	2/44(4.5%)	3/27(11%)
Enlarged exocrine glands ...	1/44(2%)	1/27(3.7%)

TABLE 6

Laboratory Findings	KUMC	SLH
Eosinophilia 5% or > .....	21/44(48%)	8/19(42%)
Increased serum calcium .....	0/40(0%)	2/23(9%)
Increased urine calcium	0/5(0%)	0/3(0%)
+ TB skin test ....	5/44(11%)	1/22(4.5%)
+ Histo skin test ...	3/44(7%)	1/21(4.8%)
+ Mumps skin test .	3/13(23%)	—
Hyperglobulinemia .	19/42(45%)	11/23(48%)
Hypoalbuminemia ..	14/42(33%)	8/23(35%)

References

1. Kjellsen, Douglas: Pulmonary sarcoidosis. *Minn. Med.* 50:249, 1967.  
2. Atwood, W. G., and Nelson, C. T.: Sarcoidosis. *Med. Clin. N. Amer.* 49:783, 1965.  
3. Masserini, C.: The radiological appearance of sarcoidosis. *Panminerva Med.* 7:444, 1965.  
4. Hartweg, Helmut: Chest x-rays in the diagnosis of sarcoidosis. *Aust. Radiol.* 10:344, 1966.  
5. Israel, Harold L.: Sarcoidosis. *Postgrad. Med.* 36:493, 1964.  
6. Cummings, M. M., and Michael, Max, Jr.: Sarcoidosis. *CM*, 1960.  
7. Young, Robert L., et al.: Pulmonary sarcoidosis: patho-physiologic correlations. *Amer. Rev. Resp. Dis.* 97:997, 1968.  
8. Siltzbach, Louis E.: Sarcoidosis: clinical features and management. *Clin. N. Amer.* 51:483, 1967.  
9. Winnacker, J. L., Becker, K. L., and Katz, Sol: Endocrine aspects of sarcoidosis. *New Eng. J. Med.* 278:427, 1968.  
10. Siltzbach, Louis E.: Sarcoidosis and mycobacteria. *Amer. Rev. Resp. Dis.* 97:1, 1968.  
11. Grant, R. P., and VanOrdstrand, H. S.: Sarcoidosis—recent progress in etiology and pathogenesis. *Cleveland Clin. Quart.* 34:205, 1967.

TABLE 7

Staging of the Disease	KUMC	SLH
Stage I .....	5/44(11%)	14/27(52%)
Stage II .....	32/44(73%)	11/27(41%)
Stage III .....	7/44(16%)	2/27(7%)

12. Lordon, Robert E., et al.: Sarcoidosis—a clinical evaluation of the alterations in delayed hypersensitivity. *Am. Rev. Resp. Dis.* 97:1009, 1968.  
13. Israel, Harold L.: The diagnosis of sarcoidosis. *Ann. Intern. Med.* 68:1323, 1968.  
14. Proceedings of the International Conference on Sarcoidosis. *Am. Rev. Resp. Dis.* 84:1, 1961.  
15. Third International Conference on Sarcoidosis. *Acta Med. Scand.*, Supp. 425, V 176, 1964.

HEART ASSOCIATION'S NEW BOOKLET GIVES ADVICE ON HEART HEALTH

"You and Your Heart," a new 16-page booklet filled with basic facts about the heart in health and disease, now is available from Kansas Heart Association. Using cartoons and simple diagrams in red and black, the booklet defines many technical terms. It also gives advice on reducing the risk of heart attack. The booklet tells how to recognize the early warning signs and what immediate steps to take to increase the chance of survival, should a heart attack occur.

"You and Your Heart" explains how the heart and blood vessel system works, what goes wrong to bring on heart attack and stroke, and what roles are played by hardening of the arteries and high blood pressure. A special section describes ways to help prevent heart attack—what to eat and what to avoid; how to determine proper body weight, and maintain it; what kinds of exercise are beneficial if done regularly; and how tension and cigarette smoking can affect the circulatory system. The person who avoids excessive worry, shuns cigarettes, has regular check-ups, and watches his weight and intake of saturated fats lessens his chances of having a heart attack and increases his prospects for healthier living.

For more information about heart attack and risk reduction, ask the Kansas Heart Association for a free copy of "You and Your Heart." It may also be requested from the Sedgwick County Heart Association in Wichita.



# Low Sodium Diet

## *A Personal Experience of Its Benefits and Pleasures*

**KARL A. YOUNGSTROM, Ph.D., M.D., F.A.C.R.,\*** *Kansas City, Kansas*

SLIGHTLY OVER A YEAR AGO a temporarily paralyzing stroke abruptly forced a re-examination of living patterns and established eating habits. First recommendations for treatment followed generally accepted medical advice to limit salt intake and handle the elimination of sodium with diuretic drugs, specifically chlorothiazide.

Some progress was made toward recovery; however, there remained annoying problems and limitations. The excessive urination caused by the diuretic drug to get rid of the sodium proved to be an inconvenience. In addition, the blood pressure fluctuated widely as a result of the unrecognized sodium in the diet intake, even though salt, as such, was reduced. The possible complications of chronic chlorothiazide usage became somewhat alarming as knowledge of this was gradually acquired. For some time it has been known that this drug could precipitate diabetes in a prediabetic; or gout in the gouty-prone individual. It may not be so generally known that it produces as much as 800-fold hypertrophy of the Islets of Langerhan.<sup>1</sup>

The need to supply potassium to cover the loss from the diuretic drug is generally acknowledged. This presents problems of major proportions from the patient's viewpoint, even for oral administration. Symptoms and signs of potassium depletion, such as lassitude and fatigue, are insidious until the depletion becomes severe. Oral, enteric-coated potassium chloride pills have been found responsible for producing small bowel ulcers where the enteric coating wears off. Potassium triplex was free of this side reaction, but the taste was sufficiently unpleasant as to be acceptable only as a last resort to save life. In addition to these unpleasant aspects of potassium supplement, more serious effects were already known. The taking of oral potassium might even produce an excess in the blood if kidney function was impaired. This could, through direct action on the heart muscle, effect contraction and precipitate a fatal event.

Knowledge of the side reactions of these drugs should be enough to give any patient nightmares if not raise his blood pressure. It was definitely one

source of anxiety for our patient even though he was assured of a large margin of safety in the orally administered potassium.

Though progress was apparently being made, a second slight stroke cancelled out the gains, and further reappraisal seemed indicated. Consultations and reading done during the three months between the episodes were now drawn on and a decision was made to follow a true low-sodium diet. It seemed obvious that it should be better to avoid sodium intake, rather than resort to the means required to run it through the body.

This program of treatment included the following different aspects: (1) Methyldopa 250 milligrams every three to four hours as necessary. The taking of this drug was guided by the blood pressure reading. Allowance for the drop caused by taking the drug was made, to still maintain a level of blood pressure required in this person to adequately perfuse the brain and avoid dizziness, unsteadiness, or aphasia. These parameters had to be gradually and cautiously learned, both by the patient and indirectly by his doctor. (2) Sodium warfarin anticoagulant was taken to protect against clotting should a period of sluggish peripheral flow be encountered. (3) A low-sodium diet, to provide at least a reduced need for chlorothiazide and level off the problem of drug dosage by reducing the factors causing the blood pressure fluctuations.

Prior to the second stroke, the patient had constantly lived with various apprehensions and discomforts. The first concerned the degree of recovery that would be obtained. Another related to the seemingly uncontrollable blood pressure fluctuations while on a so-called "salt restricted" diet. The effect of the drugs was far from reassuring. The known hazards, as well as the unpleasant taste of the potassium, was another problem. All these points were considered at the time of re-evaluation; and the program adopted alleviated all the anxiety by providing a plausible, effective solution for each. Even the problem of remembering when the drug was last taken and the last reading of the blood pressure was solved by taking a tip from hospital practice and carrying a notebook to keep a "chart" record.

At first it seemed that additional problems were being added by the low-sodium diet. Several ques-

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tions were raised. Was it really as difficult to follow as implied? Was it necessarily tasteless and uninteresting? Would it mean a dull existence just for the sake of keeping alive? The answers to these questions furnish the major message of this report.

It was soon found that there were some problems and many rewards to be gained from the low-sodium diet. A handy paperbound book was discovered that contained an alphabetized list of foods, giving caloric value and sodium content.<sup>2</sup> Using the book for reference, it was easy to learn the foods to select and those to avoid. No special effort was required, and it was really quite painless.

One of the first steps toward a low-sodium diet should be careful reading of the labels on all food products normally used. This will reveal some of the treacherous sodium food additives which can so easily defeat other control measures. True, this eliminates many familiar items from our present day cooking procedures; however, as will be shown later, very effective replacements can be found.

To make eating really interesting and pleasant as well as tasty, satisfying, and nutritious required the cooperation of the patient's wife, plus the use of some imagination. Considerable help was obtained from another book, by Elma Bagg, who had already encountered this problem.<sup>3</sup> Starting with this stimulus, the patient and his wife became involved in this health care program and found much satisfaction in discovering tasty, low-sodium foods. The use of seasoning substitutes for salt in the form of lemon juice, herbs, spices, condiments, and wine, as well as the potassium salt substitute and potassium baking powder substitute, became a way of life providing pleasures to share. It was not long before the patient began to feel sorry for those who salt their food before tasting it and who know nothing of the existing subtle flavors that can be simply concocted with but little imagination, small effort, and minimal expense—yet are virtually gourmet food.

Before the discovery of methyldopa, Kempner<sup>4</sup> achieved remarkable control of the blood pressure primarily by diet. Many people were willing to follow his very restrictive diet to be relieved of their symptoms. The reason for his success was eventually related in a very significant way to the sodium restriction, approximately 400 milligrams per day, compared to the three to four grams in the usual diet.

The pleasures and satisfaction from the low-sodium diet may be summarized: (1) The regulation of the blood pressure was achieved with less fluctuation because the sodium intake became gradually standardized; (2) the need for chlorothiazide was reduced to 25 milligrams once or at most twice per week; (3) a significant economy was realized from the reduction in the amount of methyldopa required,

three to four tablets per day compared with six to nine tablets per day while on the previous regime using only so-called salt restriction; (4) the program finally adopted afforded several unsuspected values that might have wider application when they are fully appreciated. The participation of the patient and his wife in the program and the continual excitement of discovery of new and interesting flavors provided two of the most fundamental needs in biology, according to Ardrey.<sup>5</sup> They are identity and stimulation.

Finally, mention should be made of the formulations of Elma Bagg after extensive experience with the low-sodium diet.<sup>3</sup> She suggested that our secondary schools and high schools should teach compulsory courses in basic nutrition, so that our young men and women should understand food for physical fitness. Further, that our medical schools must have more courses in nutrition and present more facts concerning the elements which food contain. Happily, the last of these suggestions is gradually being implemented.

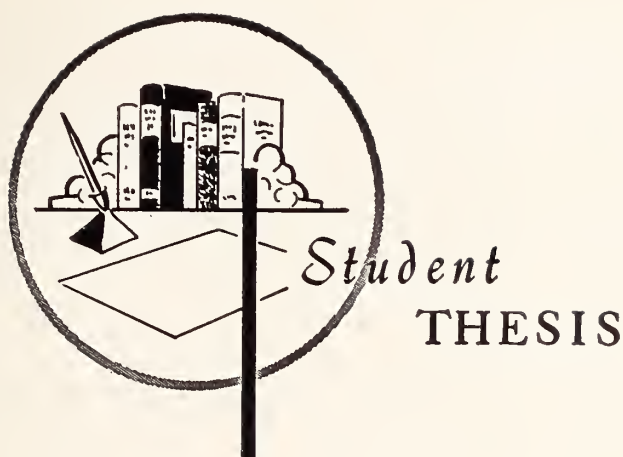
## References

1. Nichols, John, M.D.: Personal communication.
2. Conason and Metz: *The Salt-Free Diet Cookbook*. Grosset and Dunlap, Publishers, 1969.
3. Bagg, Elma W.: *Cooking Without a Grain of Salt*. Garden City, New York, Doubleday and Company, Publishers, 1964.
4. Kempner, W.: Treatment of heart disease and kidney disease and hypertensive arteriosclerotic vascular disease with rice diet. *Am. Int. Med.* 31:821-856, 1947.
5. Ardrey, Robert: *Social Contract*. New York, Atheneum Publishers, 1970.

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## Take My Word—

### *Patient Follow-Up of Medical Advice: A Literature Review*

**DANIEL A. HARPER, M.D.,** *Denver, Colorado*

THE PHYSICIAN-SCIENTIST, with justification, insists upon a rigorous approach to the diagnosis and treatment of disease. Despite the accuracy of diagnosis and the specificity of therapy, the efficaciousness of treatment of the patient depends more or less on patient follow-through of medical advice. While the physician often will accept certain diagnostic categories and therapy only on the basis of demonstrable evidence, the same physician will, quite likely, merely make an assumption concerning the compliance of his patients.

It is essential for the physicians responsible for public health, preventive medicine, rational evaluation of therapy and the care of individual patients to be cognizant of the patient's choice and ability to comply or not to comply with medical advice.

With its keystone position, it is imperative that patient compliance be subject to more than assumptions. The validity of a clinical drug trial depends upon compliance of the participants. In the case of a specific patient, compliance must be considered before one can determine if therapy failure is due to failure of the patient to comply or to failure of the drug or regimen. In certain contagious diseases, for

example, tuberculosis, the risk to the undiseased population will be least when compliance of diseased patients is greatest. Thus, anticipation of compliance might well be the major factor in making a choice of how to manage a clinical problem. As more money, emphasis, and effort are directed toward preventive medicine programs ranging from prenatal care and diabetic screening to school examinations, the follow-through by the patient will be most relevant to the success of the programs. The projected shift to outpatient diagnostic and treatment programs, in the interest of economy, will likewise depend on patient compliance or no economical benefit will accrue. In the planning for preventive health programs and outpatient diagnosis and treatment programs, the central role of patient compliance has neither been well recognized nor studied.

Based on a review of pertinent literature, the objectives of this paper are to document the extent of patient non-compliance, to determine physician awareness of the problem and to identify known variables correlating with patient non-compliance.

#### **The Extent of the Problem**

Concern over the extent of patient follow-through on medical advice and prescriptions has centered on the non-hospitalized patient who is in the position of primary responsibility for determining his own care. Patients being treated at home for tuberculosis

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constitute one group in which compliance to the therapeutic regimen is of obvious importance and in which compliance has been carefully studied.

In England, 151 chest clinic outpatients being treated with P.A.S. for tuberculosis received unannounced urine tests for P.A.S. Only 50 per cent had P.A.S. in their urine.<sup>10</sup> A retrospective study of 264 tuberculosis outpatients revealed that 43 per cent of the patients appeared to be taking less than half of the drugs prescribed. Only 25 per cent were taking more than 90 per cent of the prescribed drugs.<sup>15</sup> In 61 T.B. clinic patients studied with P.A.S. urine tests, 41 per cent of the urine tests were negative. Upon close questioning, the patients with negative reactions admitted that they were taking their medicine irregularly or not at all.<sup>28</sup> Other studies based on P.A.S. urine examinations indicate default rates of 20,<sup>12</sup> 28,<sup>29</sup> 34,<sup>23</sup> and 49 per cent.<sup>38</sup>

Marrow and Rabin studied 350 patients attending a municipal T.B. clinic who were receiving INH-riboflavin for tuberculosis. Urine specimens were collected at each clinic visit and at home visits. With patient reliability generously defined so that any patient with 50 per cent or more positive tests was considered compliant, 31.7 per cent of the patients were found to be non-compliant.<sup>26</sup>

Long term patient adherence to a program for rheumatic fever prophylaxis is considered essential in pediatric patients who have suffered an episode of this disease. Guidelines for the prophylaxis of rheumatic fever are well established and widely known. One problem in successful prophylaxis is that patient adherence to the prophylactic program is less than optimal. One hundred and twenty-seven patients who had an episode of rheumatic fever were followed for four years. In 24 per cent, participation in the follow-up and prophylaxis regimen was poor. In 30 per cent of the cases, participation was judged to be only fair.<sup>24</sup> In another study of 231 children being followed by the agency which initially treated the rheumatic fever, 39 per cent were not on prophylaxis as had been recommended. Sixty per cent of another group of 213 children were not following the recommended prophylaxis program.<sup>36</sup> In a third study, 45 per cent of 80 patients had no or low participation in the prophylaxis program.<sup>11</sup>

Short term oral penicillin therapy for acute beta hemolytic streptococcal infections have been studied. Since a complete course of antibiotic therapy may be important for a number of reasons, patient compliance to the prescribed regimen becomes an important factor. Even in those patients on short term therapy, non-compliance may be a significant problem. For example, 59 children had a ten-day course of oral penicillin prescribed and the families were carefully instructed. By actual medicine count, it was deter-

mined that 56 per cent of the patients had stopped taking the medicine by the third day and 71 per cent had stopped by the sixth day. These findings were confirmed in 41 of the patients who had urine specimens examined for penicillin.<sup>2</sup> Two hundred and sixty-four patients were questioned about their compliance with a prescribed regimen of seven days of penicillin by mouth. Failure to take the prescribed course was admitted by 34.3 per cent, and of those who failed more than half took the drug less than five days.<sup>25</sup>

On a subjective basis, one might suspect psychiatric patients of having a high non-compliance rate, and, indeed, such is the case. Forty-four per cent of 96 male schizophrenics treated at home were not faithful to their drug regimen.<sup>27</sup> Of 124 psychiatric patients in a second study, 46 per cent were thought to be non-compliant.<sup>31</sup> In the study by Wilcox *et al*, 125 patients were prescribed imipramine or thiorazine. Analysis of urine samples from two or more collections indicated an overall failure rate of 48 per cent.<sup>37</sup>

The success of screening examinations for preventive and remedial services is completely dependent upon patient follow-through. Hardy's study of data from follow up of medical examinations done on 1,068 children is most interesting. The mothers were given written memorandums of the recommendations made by the physician and nutritionist. Of 321 families for which follow-up information was available, Hardy found 34 per cent had made little or no attempt to secure the advised medical services for their children.<sup>13</sup> In a considerably different situation, Prickman *et al* did a follow-up study of routine company required examinations of 231 management executives. Twenty per cent did not comply with the advice offered based on the examination.<sup>30</sup>

A high level of patient non-compliance does not seem to be limited to any one disease or any one regimen. Benstead and Theobald found that 30 to 40 per cent of pregnant patients did not take ferrous sulfate as prescribed.<sup>1</sup> Of a group of 154 new patients seen in the general medical clinic of a large teaching hospital, 37 per cent were classified as non-compliant.<sup>6</sup> Davis and Eickhorn studied males with cardiovascular disease. Thirty per cent admitted a lack of compliance at some point, but only 11 per cent admitted a complete disregard of the medical regimen.<sup>7</sup>

The problem of compliance would seem much less critical in hospitalized patients where the environment is better controlled, and the patient has less direct responsibility for his regimen. Working with hospitalized tuberculosis patients, Fox, using P.A.S. examinations, found that only 4 per cent of the patients had one or more negative tests.<sup>12</sup> In a



similar situation, using unsuspected collections of urine, Lundz *et al* found only 2 per cent of 444 patients had failed to take the P.A.S.<sup>23</sup> On the other hand, in hospitalized patients who were responsible for taking antacid left at the bedside, ulcer patients took only 42 per cent of the antacid prescribed.<sup>33</sup> In a later study in the same hospital, patients were found to take only 46 per cent of the amount of antacid prescribed.

To briefly recapitulate, referring to *Table 1*, there is a surprising degree of patient non-compliance in patients with various disease processes and therapeutic regimens. The rate is relatively constant regardless of the disease process, type of regimen or length of time required to fulfill the regimen.

### Physician Awareness and Perception of the Problem

The logical analysis of factors influencing the problem of patient non-compliance demands that consideration be given to the physician's awareness of the problem. It might be argued that the physician is often aware of the high probability of patient non-compliance and can take steps accordingly to compensate for this. Yet, the data accumulated over the past several years does not support this hypothesis. In the study of antacid self medication in the hospitalized patient, 80 per cent of 27 physicians overestimated by an average of 32 per cent their patients' adherence to the antacid regimen.<sup>5</sup> Davis reports a study in which 81 senior physicians in a general medical clinic in a large teaching hospital were questioned concerning their estimation of their patients' compliance. Fifty-six per cent felt that nearly all their patients were compliant. Thirty-seven

per cent felt that about three fourths were compliant. Only 7 per cent felt that less than three fourths were compliant.<sup>9</sup> In a later study by Davis in the same hospital clinic a general non-compliance rate of 37 per cent was noted.<sup>6</sup> The physicians tend to believe that patients are more compliant than available data would indicate.

Perhaps a portion of the physician's apparent underestimation of the problem of non-compliance can be attributed to the possibility that the physician cannot depend upon the veracity of the patient's report concerning his follow up on the doctor's advice and prescriptions. A ten-day course of penicillin by mouth was prescribed for acute streptococcal infections in 59 children in the study by Bergman and Werner. Of the families interviewed, 83 per cent reported that all the medicine had been given as prescribed. Yet, by actual medicine count, 56 per cent of the patients had stopped taking the penicillin by the third day and 71 per cent by the sixth day.<sup>2</sup> In an uncontrolled study of his private patients, Jenkins gave prescriptions for oral doses three times a day for two weeks. Medicine counts by the office nurse indicated that the patients took about half of the prescribed doses; however, "in not a single case did one of the patients give any indication (to the physician) that he had not been completely faithful to the regimen prescribed."<sup>18</sup> Of patients on a P.A.S. and INH regimen for tuberculosis, 94 per cent indicated to the physician that they were taking the medicine faithfully. Nevertheless, urine exams for P.A.S. indicated only 72 per cent were, in fact, faithful.<sup>29</sup>

The physician would have a definite advantage in dealing with non-compliance if he could distinguish between the compliant and non-compliant patient.

TABLE 1

#### *Type of Patient Group*

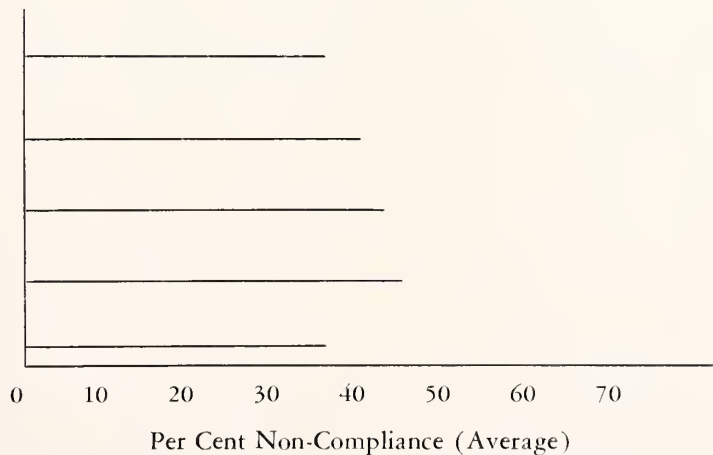
Tuberculosis out-patients (10, 15, 28, 12, 29, 23, 38)

Rheumatic fever prophylaxis (24, 36, 11)

Acute streptococcal infections (2, 25)

Psychiatric out-patients (27, 31, 37)

General Medical clinic (6)



This would seem a difficult task. In the self-medication with antacid study conducted with hospitalized patients, the physicians were asked to segregate compliant from non-compliant patients. This was done only for those patients for which the physician indicated the most confidence in his judgment. The physician had no better than a random chance of separating the compliant from the non-compliant patient as the correlation between estimated adherence to regimen and actual adherence was clustered around zero.<sup>5</sup> In the study of Dixon *et al*, in those cases where physicians gave estimates of the compliance of the tuberculosis outpatients they were following, the opinions proved unreliable in over 30 per cent of the cases.<sup>10</sup> In another study of outpatients with tuberculosis, 43 per cent of the defaulting patients were not suspected by the physician.<sup>29</sup> There is no indication that the physician can accurately predict which of his patients may be defaulting.

### Characteristics of the Non-Compliant Patient

A number of studies have looked for relationships of demographic characteristics of the patient with variations in compliance. Some physical characteristics of the patient seem to be correlated to rate of compliance. On the whole, these studies show that men are more compliant than women. In the study of Dixon *et al*, 58 per cent of the men were compliant while only 39 per cent of the women were faithful to their tuberculosis therapy regimen.<sup>10</sup> Luntz *et al* found 70 per cent of the men were compliant compared to 61 per cent of the women.<sup>23</sup> In a third study of tuberculosis clinic patients, 54 per cent of the men followed their regimen versus 45 per cent of the women.<sup>38</sup>

Three separate studies came to similar conclusions regarding the age and sex of the patients at greatest risk for defaulting. Young females were the most unreliable patients. In Dixon's study, 66 per cent of the females under 29 years of age were non-compliant.<sup>10</sup> In another study, 65 per cent of the women in this age group were non-compliant.<sup>38</sup> In the third study, females of 25 to 44 years of age were least compliant.<sup>23</sup>

Adolescents as a group have low compliance rates.<sup>23, 26</sup> In men the age group of 55 years or older is associated with low compliance.<sup>7, 10, 23</sup> However, in the study of follow-up on advice given, based on the examination of company executives, non-compliance was highest in the 26 to 36 age group.<sup>30</sup>

In the psychiatric outpatients seen by Wilcox *et al* no correlation was found between compliance and age.<sup>37</sup> Davis found no correlation between either sex or age and compliance in the medical clinic patients.<sup>6</sup> In children being treated for streptococcal

infections, older children were more likely to receive their medicine.<sup>2</sup>

In the search for meaningful correlations, a number of investigators examined socio-economical variables. Although a series of significant correlates has not been forthcoming, the studies are interesting.

In Davis' medical clinic patients, education was not correlated to compliance.<sup>6</sup> A "trend" toward increased compliance with increased education was noted in the study of municipal clinic tuberculosis outpatients.<sup>26</sup> In a cardiac work evaluation unit unskilled workers were less likely to follow recommendations.<sup>19</sup>

Hardy reports, "In general, a direct relationship between social and economic aspects of family background was indicated, although the degree of relationship is not high."<sup>14</sup> MacDonald found that social circumstances had only "slight" correlation with patient participation.<sup>24</sup> Elling *et al*, studying participation in rheumatic fever prophylaxis,<sup>11</sup> Marrow *et al*, studying municipal tuberculosis clinic patients,<sup>26</sup> and Davis studying general medical clinic patients<sup>6</sup> were unable to correlate social status and income to degree of patient participation.

Family stability seems to be well correlated with degree of compliance. A stable family situation with harmony in family relationships correlated well with a high degree of patient compliance in two studies of rheumatic fever prophylaxis<sup>11, 24</sup> and one study of tuberculosis patients.<sup>26</sup> Family supervision was responsible for decreasing the default rate of non-hospitalized schizophrenics from 44 to 18 per cent.<sup>27</sup> Likewise, in another group of psychiatric patients, compliance was more likely if there was a member of the household who was concerned about the patient.<sup>31</sup>

The effect of having a caring family member may explain why Wilcox *et al* found the compliance rate to be greater in married patients.<sup>37</sup> In the municipal tuberculosis clinic population, married patients were very reliable with only a 5.7 per cent default rate compared to a default rate of 61.5 per cent in divorced or separated persons.<sup>26</sup>

Very little data is available concerning the role of psychological and personality factors. In obese patients, a stable personality was associated with the most success in weight loss,<sup>39</sup> and in psychiatric patients, compliance was less in patients judged to be moderately or severely disturbed.<sup>31</sup>

### Relationship of Regimen and Compliance

Several investigators have surmised that the rate of non-compliance can be directly related to the incidence of side effects. Benstead and Theobald felt that the 40 per cent non-compliance rate of pregnant



patients for whom ferrous sulfate was prescribed was directly due to the side effects.<sup>1</sup> Likewise, the low compliance of patients on P.A.S. therapy has been attributed to the incidence of drug side effects.<sup>10</sup> Wynn-Williams and Arris probed this relationship somewhat more carefully. Of those patients taking P.A.S. who had gastrointestinal disturbances 40 per cent were regular takers, while 60 per cent were defaulters. The patients with severe gastrointestinal disturbances were more likely to be defaulting (73%).<sup>38</sup> On the other hand, Fox, after questioning the patients who did not take P.A.S. as prescribed, was unable to relate failure to comply with side effects of the drug.<sup>12</sup> In psychiatric patients, side effects were not associated with failure to comply.<sup>31</sup>

Patients definitely seem able to comply more readily with some types of advice than others. In cardiac patients, the doctors' advice concerning work restrictions was most often followed. Advice concerning diet was less often followed. Advice to change personal habits was seldom followed.<sup>7, 8</sup> Patients seen in the cardiac work classification unit complied with medical advice in 92 per cent of the cases. Vocational compliance dropped to 76 per cent and advice in the psychosocial area was followed only 66 per cent of the time.<sup>19</sup> A regimen of medicine treatment is more likely to be chosen than treatment involving surgery.<sup>13, 30</sup>

In cardiac patients,<sup>7</sup> one group of tuberculosis patients,<sup>12</sup> and company executives,<sup>30</sup> compliance increased with time. On the other hand, two studies of tuberculosis patients indicated a progressive decrease of compliance with time.<sup>15, 23</sup>

In a study involving clinical drug trials, Joyce discovered that the patients were almost twice as compliant with the drug treatment which they preferred.<sup>20</sup> Thus, the patient's perception of the effectiveness of the regimen may be an important factor in compliance. Roth found that the amount of antacid prescribed had no correlation with the amount taken.<sup>33</sup> One very consistent finding has been detected by several investigators: a patient's degree of compliance with one aspect of therapy is not directly related to his compliance with other aspects of therapy.<sup>4, 8, 12</sup>

### Severity of Symptoms

The severity of the patients' symptoms did not correlate with compliance in patients receiving antacid therapy<sup>33</sup> and rheumatic fever follow-up care.<sup>24</sup> Berkowitz *et al* have data to suggest that compliance is less in clinics treating diseases that are chronic, costly and frequently associated with complications than in clinics treating less difficult, more acute, disease processes.<sup>3</sup>

### Patient-Physician Relationship

The doctor-patient relationship is a multi-faceted, complex interreaction not readily amenable to dissection in the experimental context. Yet, it is of obvious importance in patient compliance.

The attitude that the physician conveys toward the regimen offered is important. Of two psychiatrists participating in a study, the physician who stated that he was less favorably disposed toward drug therapy had a lower rate of patient compliance than the other physician.<sup>32</sup> The continuity of the doctor-patient relationship is a variable which stood in base-relief in a rheumatic fever prophylaxis program. Sixty per cent of 231 children who had been continuously followed by the agency originating treatment continued on prophylaxis while only 19 per cent of 231 children not followed by the agency originating treatment were on prophylaxis.<sup>36</sup>

The physician-patient relationship has cultural, psychological and social parameters. Adequate data relating these parameters to compliance is not available. The concept of "sick role" has been linked with compliance,<sup>35</sup> and Davis speculates on the role of the psychological concept of cognitive dissonance in patients' acceptance of doctors' advice.<sup>8</sup>

In a study where cardiac patients were asked to evaluate their doctor-patient relationship, 18 per cent of those who perceived the relationship as "friendly" never complied, only 14 per cent of those who had a "business-like" relationship never complied.<sup>7</sup> In an objective, statistically sound study of the influence of the doctor-patient relationship compliance, the relationship on the first visit was not correlated with subsequent compliance. However, the data suggested that non-compliance may be enhanced in a continuing relationship between a passive physician and an authoritative patient.<sup>6</sup> A more subjective study of hospitalized psychiatric patients demonstrated that an increased degree of interpersonal compatibility enhances compliance.<sup>34</sup> Mothers of children in a rheumatic fever prophylaxis program were asked to judge how clinic doctors felt about them. Thirty-nine per cent of the mothers who felt that their doctor's attitude was positive toward them were rated as highly compliant. The compliant rate for those mothers who felt the doctors had a negative impression was only 17 per cent.<sup>11</sup> Patients with low or high levels of anxiety are able to recall less of the doctors' advice than those with moderate levels of anxiety.<sup>22</sup>

Effective communication, grounded in the relationship of the patient and his doctor, is a process upon which compliance is dependent. There may be a tendency for physicians to mention advice and therapy last in their discussions with the patient. Unfortunately, the advice and therapy may never be re-

membered by the patient as patients tend to remember best what the doctor first tells them.<sup>22</sup> The patient's understanding of the nature and purpose of the regimen is significantly correlated with compliance.<sup>11</sup> Yet, Ley and Spelman have clearly shown that patients frequently do not have sufficient information to follow medical advice.

The context of the discussion is another variable influencing patient compliance. Janis and Feshback<sup>16</sup> studied the effect of fear inducing cooperation by preparing three illustrated lectures each containing the same basic dental information and each containing the same recommendations about oral hygiene. While the strong fear lecture aroused the most fear, the follow-up studies show that the minimal fear lecture produced the desired change in behavior in the largest number of subjects. The strong fear lecture was least effective. A similar study<sup>17</sup> with an attempt to change attitudes toward cigarette smoking gave support to this finding.

While patient comprehension and memory<sup>23</sup> are of undisputed importance, better communication may not produce increased compliance. Patients treated for acute infections of beta hemolytic streptococci and who received treatment by physicians who placed "special emphasis" on the need for following the seven-day course of penicillin were not significantly more compliant than the patients who did not receive the "special emphasis."<sup>25</sup>

## Discussion

The high incidence and wide prevalence of patient non-compliance to medical advice should be a source of great consternation to physicians responsible for public health and patient care. A high rate of non-compliance may increase morbidity and mortality, and is economically wasteful in terms of medical man hours used with less than optimal return. Nevertheless, on the basis of amount of research effort expended, one could conclude that physicians are more willing to accept a "patient failure" rate of 30 to 40 per cent than to accept a therapeutic program with a similar failure rate. It is apparent that in some treatment programs, notably those dealing with patients with chronic diseases treated outside the hospital, the weak link in the therapy is the factor of patient non-compliance. Clinicians should become more familiar with known factors influencing patient compliance and should encourage meaningful research in this area.

It is important to realize that physicians tend to overestimate the compliance of their patients and that they lack the ability to predict which patients are not complying to a satisfactory degree. It is equally important to note that the physician cannot depend upon what the patient tells him concerning

degree of compliance. As physicians become more cognizant of the problem and more aware of the significant variables, the ability to estimate and predict non-compliance should improve.

Some of the demographic characteristics of patients at high risk for non-compliance seem rather constant and not easily manipulated by the physician. However, the physician should be aware of these variables and give consideration to them in planning for therapy, especially in young women, adolescents and older men without families.

In many patients, the decision not to comply with medical advice must ultimately be grounded in the psychosocial constitutions of the patients. It seems obvious that the patient presented with a choice of complying or not complying with a medical regimen is presented with a dilemma of sorts. The choice to comply may be charged with anxiety and conflict as the patient must adopt a sick role and accept certain inconveniences, perhaps including changes in habits, work patterns and even life style. On the other hand, failure to comply also generates anxiety and conflict as the act of non-compliance and its possible consequences are realized. In the end, many patients choose a middle course which may or may not lead to compliance that is medically adequate. Theoretical psychosocial concepts contribute to an understanding of why some patients choose not to comply; however, at the present time, it would seem that very little could be done by the physician on the basis of psychosocial theory to increase compliance. The prudent physician should have a knowledge of prevalent values and attitudes held by his patients, and he should strive to select treatment regimens which demand the least possible change in the patient's life style. There continues to be a need for more understanding of methods to influence behavior in those patients who see no virtue in changing or complying.

The consensus shows a surprising lack of direct correlation between social and economic status and extent of compliance.

For a multitude of reasons, the physician who has personally accepted full responsibility for diagnosis and therapy has usually hesitated to consider patient compliance his responsibility. As a result, the process of the transaction between the doctor and patient has not been adequately examined nor its importance clearly realized. Optimally structuring the doctor-patient relationship may be the most effective way for the individual physician to effect increased compliance. First, just as he would look for evolving signs and symptoms in follow-up visits, the physician should examine the extent of the patient's compliance. Second, the physician may need to develop and expand his role as an educator. The process should be a learning experience for the patient to



give him a foundation of knowledge and insight which will make compliance easier and more rational. Third, the physician should become actively aware of recent advances in understanding the communication process. By examining the structure and content he might be more certain that the patient is registering the desired information. This may involve: (1) limiting the specific recommendations offered at any one sitting; (2) having the patient write down the therapy plan, and (3) arranging the sequence of the discussion to place the most important points first. The physician should be aware of which techniques are most effective and applicable. For example, the technique of arousing a high degree of fear does not lead to increased compliance. The physician might anticipate and thus plan to counter many of the reasons patients may harbor for not following through with the medical advice.

One might presume that patient satisfaction is intuitively linked with adequate compliance. What factors determine patient satisfaction has not been well studied. Likewise, one could also assume that the continuity of care is important, perhaps even to the point of being a major variable. Yet its role in compliance has not been well quantitated. It is not known to what extent compliance resulting from continuous care by one physician compares to that resulting from a group of physicians. Nor is it known if compliance can be related to the continuity of care in the context of a specific clinic or institution rather than to an individual physician.

The study of factors influencing patient compliance is far from complete. Yet the unanswered questions become critically important in light of the trends in medicine today including increased outpatient emphasis, increased efforts in preventive medicine, and increased utilization of a clinic or institution to function in the place of the personal physician.

## Summary

The literature concerned with patient compliance has been examined with a special effort to organize thinking about the problem of patient non-compliance into a logical sequence. The extent of the problem, variables correlating with non-compliance, and the present state of knowledge of factors in patient non-compliance have been discussed.

## References

1. Benstead, N. and Theobald, G.: Iron and the physiological anemia of pregnancy. *Brit. Med. J.*, 1:407-410, 1952.
2. Bergman, A. and Werner, R.: Failure of children to receive penicillin by mouth. *New Eng. J. Med.* 268:1334-1338, 1963.
3. Berkowitz, N., Malone, M. and Klein, M.: Patient care as a criterion problem. *J. Health and Human Behav.* 3:171-176, 1962.
4. Berkowitz, N., Malone, M., Klein, M. and Eaton, A.: Patient follow-through in the outpatient department. *Nrs. Research* 12:16-22, 1963.
5. Caron, H. and Roth, H.: Patients' cooperation with a medical regimen. *J.A.M.A.* 203:120-124, 1968.
6. Davis, M.: Variations in patients' compliance with doctors' advice: an empirical analysis of patterns of communication. *Am. J. Pub. Health* 58:274-288, 1968.
7. Davis, M. and Erickhorn, R.: Compliance with medical regimens: a panel study. *J. Health and Human Behav.* 4:240-249, 1963.
8. Davis, M.: Predicting non-compliant behavior. *J. Health and Soc. Behav.* 8:265-271, 1967.
9. Davis, M.: Variations in patients' compliance with doctors' orders: analysis of congruence between survey responses and results of empirical investigations. *J. Med. Edu.* 41:1037-1048, 1966.
10. Dixon, W., Strodling, P. and Wootton, I.: Out-patient P.A.S. therapy. *Lancet* 2:871, 1957.
11. Elling, R., Whittemore, R. and Green, M.: Patient participation in a pediatric program. *J. Health and Human Behav.* 1:183-191, 1960.
12. Fox, W.: The problem of self-administration of drugs with particular reference to pulmonary tuberculosis. *Tubercle, Lond.* 39:269-274, 1959.
13. Hardy, M.: Follow-up of medical recommendations. *J.A.M.A.* 136:20-28, 1948.
14. Hardy, M.: Psychological aspects of pediatrics: patient resistance to the need for remedial and preventive services. *J. Pediat.* 48:104-144, 1956.
15. Ireland, H. O.: Outpatient chemotherapy for tuberculosis. *Amer. Rev. of Resp. Dis.* 82:378-383, 1960.
16. Janis, I. and Feshback, S.: Effects of fear arousing communication. *J. Abnorm. Soc. Psychol.* 48:78-92, 1955.
17. Janis, I. and Terwilliger, R.: An experimental study of psychological resistance to fear arousing communications. *J. Abnorm. Soc. Psychol.* 65:403-410, 1962.
18. Jenkins, B.: Are patients true to T.I.D. and Q.I.D. doses? *Gen. Practitioner* 9:66-69, 1954.
19. Johannsen, W., Hellmuth, G. and Sorauf, T.: On accepting medical recommendations: experiences with patients in a cardiac work classification unit. *Arch Environ. Health* 12:63-69, 1966.
20. Joyce, C.: Patient co-operation and the sensitivity of clinical trials. *J. Chron. Dis.* 15:1025-1036, 1962.
21. Ley, P. and Spelman, M.: *Communicating with the Patient*. London, Staples Press, 1967, pp. 37-45.
22. Ley, P. and Spelman, M.: Communication in an out-patient setting. *Brit. J. Soc. Clin. Psychol.* 4:114-116, 1965.
23. Luntz, G. and Raymond, A.: New stick test for P.A.S. in urine. *Brit. Med. J.* 1:1679-1684, 1960.
24. MacDonald, M., Hagverg, K. and Grossman, B.: Social factors in relationship to participation in follow-up care of rheumatic fever. *J. Pediat.* 62:503-513, 1963.
25. Mohler, D., Wallin, D. and Dreyfus, E.: Studies in the home treatment of streptococcal disease. *New Eng. J. Med.* 252:1116-1118, 1955.
26. Morrow, R. and Rabin, D.: Reliability in self-medication with isoniazide. *Clin. Research* XIV, 2:362, 1966.
27. Parks, C., Brown, G. and Monck, E.: The general practitioner and the schizophrenic patient. *Brit. Med. J.* 1, 2:972, 1962.
28. Pitman, E., Benzier, E. and Katz, M.: Clinic experience with a urine P.A.S. test. *Dis. Chest* 36:1-2, 1959.
29. Preston, D. and Miller, F.: The tuberculosis outpatients' defection from therapy. *Amer. J. Med. Sci.* 247:55-57, 1964.
30. Prickman, L., Koelsche, G., Berkman, J., Carryer, H., Peters, G. and Henderson, L.: Does the executive health program meet its objectives? Follow-up studies of examinations of 231 management executives. *J.A.M.A.* 167:1451-1455, 1963.
31. Ranton, C., Affleck, J., Carstain, D. and Forrest, A.: A follow-up of schizophrenic patients in Edenbury. *Acta Psych. Scand.* 39:548-551, 1963.

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# Clinical Cardiology

## *Hemodynamic Effects of Cardiac Arrhythmias*

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RECENT ADVANCES in intensive cardiac care and widespread use of continuous electrocardiographic monitoring have emphasized the frequency and nature of cardiac rhythm disturbances. Recognition, however, requires at least a consideration of therapy. Proper therapy is predicated on an understanding of the "natural history" and hemodynamic consequence of a specific arrhythmia.

The net effect of a particular arrhythmia is determined by the circulatory state of the patient as well as the nature of the rhythm disturbance. Usually "benign" rhythm disturbances such as bigeminy, atrial fibrillation, etc., occurring in the patient with a limited cardiac reserve, may rapidly result in severe cardiac decompensation with myocardial ischemia, hypoxia, and hypotension, shock, or death. Furthermore, the arrhythmia may compromise the blood supply to the end organs, and thus produce myocardial infarction, renal failure, cerebrovascular accidents, hepatic necrosis, infarction of the intestinal tract, etc.

Since many arrhythmias are transient and cause only minor alterations of the circulation, or occur in patients with less severely compromised circulations, the symptoms produced may be vague and nonspecific. Such symptoms include palpitations, episodes of weakness, and fatigue. On the other hand, they may cause more serious symptoms and signs such as transient neurological deficits, lapses of memory, presyncope or syncope, increasing congestive heart failure, increasing angina, intermittent claudication, etc.

It must be remembered that the hemodynamic effects resulting from an arrhythmia are not due solely to the changes of cardiac function. The observed response of the circulation may well be due to peripheral effects. Thus, the status of the peripheral resistance, blood volume, baroreceptor activity, and venous return must be considered in any critical analysis of arrhythmic effects.

Rather than discussing the hemodynamics of particular arrhythmias, it is useful to consider the physiologic alterations that may be produced by any arrhythmia.

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\* Dr. Bartel is Instructor in Medicine, and Dr. McIntosh is Professor of Medicine and Chief, Cardiovascular Division, Cardiovascular Laboratory, Department of Medicine, Duke University Medical Center, Durham, North Carolina.

This article was prepared for the JOURNAL by the Kansas Heart Association.

### **Rate**

The rate of contraction of the ventricles will determine the cardiac output if the volume of blood ejected with each stroke remains unchanged. Thus, rapid or slow rates critically affect hemodynamics. Bradycardia may produce profound effects, especially when the stroke volume cannot increase and peripheral compensatory mechanisms are inadequate. In many patients, however, the heart may compensate physiologically during slow heart rates by increasing stroke volume due to increased ventricular filling and ventricular wall pressure (Starling's Law). The net effect of increased stroke volume may compensate for a decreased heart rate resulting in insignificant changes in cardiac output which can be adequately compensated for by an increase in peripheral resistance.

In addition, bradyarrhythmias may permit the discharge of "irritable" pacemaker foci, thus predisposing to tachyarrhythmias and producing bradycardia-tachycardia syndromes.

If the heart rate increases beyond a critical rate (varying with the basic status of the cardiovascular system) the ventricle fills incompletely during diastole, resulting in a decreased output per beat. A similar, but transient, effect occurs during rapid irregular rhythms or multiple premature contractions (the earlier the contraction, the smaller the subsequent output).

### **"Atrial Kick"**

Although appreciated by Harvey (1628), the importance of coordinated contractions of the atria and ventricles and the contribution of atrial systole to ventricular filling have recently been reemphasized. In normal hearts, atrial contraction may add between 10 and 20 per cent of ventricular volume, whereas in severe valvular heart disease, such as mitral stenosis, the diastolic ventricular volume may increase over 50 per cent during the period of atrial systole. It has been demonstrated that with an effective, well placed atrial contraction a higher ventricular end-diastolic volume may be obtained with a lower mean atrial pressure than occurs when the atria are not functioning properly. Insufficiency of the AV valves may also be produced by the loss of coordinat-



ed atrial and ventricular contractions, resulting in detrimental cardiovascular effects.

The hemodynamic effects of a rapid or slow heart beat may be minimal if the "atrial kick" is preserved, but when it is lost, the additional insult may cause decompensation.

Common examples of tachycardia associated with loss of coordinated atrial and ventricular contractions are atrial fibrillation, junctional (nodal) rhythm, and partial (second degree) heart block. The commonly used types of ventricular pacemakers should also be included, since atrial and ventricular contraction are not synchronized.

### Method of Ventricular Activation

Several studies have shown that alteration of the normal sequence of activation of ventricular contraction results in adverse hemodynamic effects. Given two arrhythmias with identical coordination of atrial and ventricular contraction and the same heart rate, one demonstrating an abnormal sequence of ventricular activation (i.e., aberrant conduction) and the other normal sequence of activation, the former will result in greater alteration of hemodynamics. Such alterations, in addition to the absence of an effective atrial kick, explain why ventricular tachycardia or junctional tachycardia with aberrant conduction is less well tolerated than atrial tachycardia. It may also explain why patients with sinus bradycardia may deteriorate rather than improve when the heart rate is increased by fixed rate ventricular pacing (loss of atrial kick and normal ventricular activation).

### Effects of Pharmacologic Agents

It should be mentioned that in the conversion of arrhythmias, especially tachycardias, to a normal sinus mechanism with drugs, the frequent myocardial depressant effect of these medications may result in a significant, although usually transient, fall in cardiac output. Thus, the administration of drugs such as lidocaine, quinidine, Procainamide (Pronestyl®), Diphenylhydantoin sodium (Dilantin®), and propranolol hydrochloride for management of arrhythmias should be performed under careful monitoring; the smallest effective dose should be used with the expectation that the patient may experience a temporary decrease in cardiac output even after normal rhythm has been established.

### Conclusion

The clinical manifestations of cardiac arrhythmias may produce unusual or ill-defined symptom complexes. The occurrence of incipient or increasing congestive heart failure, angina pectoris, intermittent claudication or episodic dizziness, fatigue, transient neurological disturbances or paroxysms of dysp-

nea should alert the physician to consider the possibility of a cardiac arrhythmia.

It can be concluded that the hemodynamic effects of arrhythmias depend upon the underlying status of the myocardium, blood vessels, and end organs, the heart rate, preservation of the "atrial kick," and normal sequence of activation of the ventricles. The altered hemodynamic effects may be further aggravated by the effects of pharmacologic agents used to correct the arrhythmia.

## Student Thesis

(Continued from page 271)

32. Reynolds, E., Joyce, C., Swift, J., Tooley, P. and Weatherall, M.: Psychological and clinical investigation of the treatment of anxious out-patients with three barbiturates and a placebo. *Brit. J. Psychiat.* 3:84-95, 1965.

33. Roth, H. and Berger, D.: Studies on patient cooperation in ulcer treatment. *Gastroent.* 38:630-633, 1960.

34. Sapolasky, A.: Relationship between doctor-patient compatibility and outcome of treatment. *J. Abnorm. Psychol.* 70, 1:70-76, 1965.

35. Sabel, R. and Igalls, A.: Resistance to treatment, explorations of the patient's sick role. *Am. J. Psychotherapy* 18:562-573, 1964.

36. Wallace, H., Lost, M., Oliversmith, F., Azzaretti, L. and Rich, H.: Study of follow-up of children recommended for rheumatic fever prophylaxis. *Amer. J. Public Health* 46:1563-1570, 1965.

37. Wilcox, D., Gillan, R. and Hare, E.: Do psychiatry out-patients take their drugs? *Brit. Med. J.* 2:790-792, 1965.

38. Wynn-Williams, N. and Avis, M.: On omitting P.A.S. *Tubercule* 39:138-142, 1958.

39. Young, C., Berresford, K. and Moore, N.: Psychological factors in weight control. *Amer. J. Clin. Nutr.* 5: 188-191, 1957.

40. Zola, E.: A social scientist's perspective on the problem of "unmotivated" clients in education for social work with "unmotivated" clients, proceedings of an institute. Brandeis University Papers in *Social Welfare* 9, Fall, 1965.

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## *The President's Message*

### *Communication, Leadership, Problem Solving*

The Kansas Medical Society is fortunate in the breadth and scope of its committees and commissions and especially in active physician participation. These devices of planning and guidance give the membership tools for expressing desires and goals for the future growth of our Society. In turn, the House of Delegates governs our Society at annual sessions, directing the course of Kansas Medicine for the months and years ahead.

Announcement of these important commission and committee assignments for the new year will be made in the very near future.

It would be impossible to thank each individual physician who during the past year has actively assisted in policy formation and decision making. In the interest of actively involving physicians in our Society's efforts, a few changes are made each year in commission and committee structures. To those who so ably assisted Dr. Francis Collins during his tenure as President, our thanks and gratitude are expressed.

During the months ahead, it is my earnest hope that all of you—every physician in Kansas—will closely follow the affairs of your Kansas Medical Society. The officers you elected and especially your President stand ready at any time and at any place to be of service to the membership and to the health profession of the state. I earnestly solicit your ideas, your help, your questions and your problems.

The Kansas Medical Society is not an executive office in Topeka with dedicated staff members and a group of elected officers. Rather, the Kansas Medical Society is the 1,990 members who make it up, whose contributions assist in policy formation and whose dues are its life's blood. Your concepts, your thoughts, your ideas will help direct this Society for the months ahead.

Every professional society has its own personality and, in turn, every society wants to be successful. Many committees and groups are frustrated because their members do not know how to participate in society affairs. It is our hope that the communication channels which were opened so successfully by Dr. Collins, our Immediate Past President, will continue



to expand and grow and serve as a means of keeping Society members informed.

In the months ahead in the changing socio-economic scene, as well as in the changing patterns of American life today, the officers hope that we can open two-way lines of communication between the physicians of Kansas and the Society and their officers. We need these lines in order to have not only knowledgeable officers but a better informed membership as well.

We, the officers, hope the Kansas Medical Society can serve you, the members, during the next twelve months in communications, in leadership, and in problem solving.

*J. J. Reale, M.D.*

*President*





## Editorial COMMENT

### *Come Get It*

Endlessly the public is told that health is a "right"; when something goes wrong or when you think something is wrong, see your doctor. It is your right. Come get it.

John Garfield, M.D., writing for the *Scientific American*, suggested an amusing analogy—amusing, by the way, because it applied to someone else, not ourselves. An informed citizen is a better citizen, the analogy implies. Know your country and become more patriotic. So, Congress votes a small tax and says travel free as you wish anywhere in the nation. It's your right. Then, Congress neglects to add any more airplanes, or airports, or baggage claim areas and a hard-pressed industry—should this fable come to pass—would be inundated.

Follow your imagination through this fable a short distance. The long line of passengers standing at the gate as the plane departs have a "right" equal to those who are on it. Therefore, their right was denied them and equality for all persons again becomes a mockery.

The Government offered its subjects a sought-after and a desirable prospect. The Government pledged this was theirs for the asking. It established the demand, promised delivery—and sat back.

Of course, hard pursuit of this analogy shows inaccuracies because travel and health care is like comparing apples with oranges. But, on the surface some points might be made.

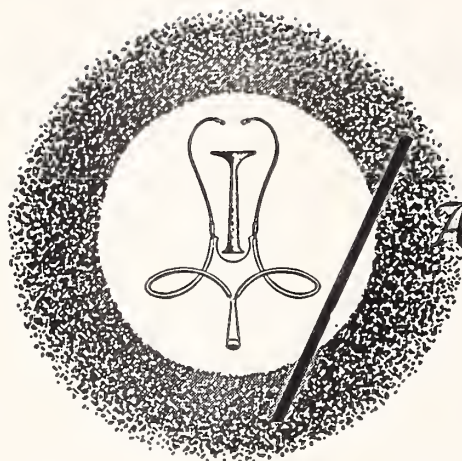
For example, when free enterprise faces the flood of this newly stimulated demand, costs sky-rocket. By now, Government is afraid to retract its public offer or even restrict it, so Government turns on the industry for overutilization. To further stretch the fable of air travel, the public continues to be told, "come and get it," but the airlines have penalties imposed because they carry too many passengers, too often. The ultimate conclusion is that the airlines struggle

in the face of these intolerables until from sheer exhaustion the system collapses.

Medicine is struggling in the face of these intolerables. Medicine is trying to make the system work. The Kansas Medical Society has become involved in many activities designed to provide necessary care for all who ask for it. Enlargement of the medical school to educate more physicians, especially in primary care, is one project. Expansion of the school to other cities than at the Kansas City campus is another. Exploring the use of skilled technical assistants is well under way. Experimentation with Foundations may soon begin in Wichita and elsewhere. Intern and resident training opportunities are being expanded within this state. Utilization and peer review already have become realities. Evidence of change is appearing from many places. And all this, all of it, planned and implemented by free enterprise in an endeavor to assist in solving a problem.

Now, the Kansas Medical Society requests help of a kind that will cost nothing in new taxes, no new laws, no controls or penalties. In a simple, logical, clearly constructed resolution prepared by the Medical Society of Sedgwick County, which was adopted by the House of Delegates last month, it is urged that health care be thought of as a human *need*. If emphasis can be directed on this fact by whoever discusses the subject, the JOURNAL believes the public will accept the distinction.

Small point? Not at all! What you are told is your right, you demand and on your terms. When in need, those capable of helping will do all in their power to be of assistance. It is urged that every physician read Resolution 71-48 in this JOURNAL and give it the widest publicity he can. The Kansas Medical Society as an organization intends to do just that. —O.E.E.



## Announcements

*Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's CALENDAR. Notice of the session is posted in advance to allow the physician time to make preparations.*

### JUNE

- June 20-24 American Medical Association, Chalfonte-Haddon Hotel, Atlantic City. Write: E. B. Howard, M.D., Exec. Vice President, 535 North Dearborn, Chicago 60610.
- June 20-24 Woman's Auxiliary to the AMA, Traymore Hotel, Atlantic City. Write: Miss Margaret N. Wolfe, 535 North Dearborn, Chicago 60610.
- June 22-23 American Diabetes Association, Sheraton-Palace Hotel, San Francisco. Write: Mr. J. R. Conelly, Exec. Director, 18 East 48th Street, New York 10017.

### JULY

- July 16-17 Rocky Mountain Cancer Conference, Brown Palace Hotel, Denver. Write the Rocky Mountain Cancer Conference, 1764 Gilpin Street, Denver 80218.
- July 22-23 Second annual seminar in General Surgery, Colby College, Waterville, Maine. Write: Paul D. Walker, Jr., Director of Special Programs, Colby College, Waterville, Maine 04901.
- July 18-23 Third British Academic Conference in Otolaryngology, Edinburgh. Write: The Hon. General Secretary, John Balantyne, 61 Harley Street, London W1N 1DD, England.

### POSTGRADUATE EDUCATION

University of Colorado:

- June 21-26 *17th Annual General Practice Review* (Estes Park)
- July 5-8 *Ophthalmology* (Colorado Springs)
- July 11-14 *Pediatrics* (Aspen)
- July 20-24 *Internal Medicine* (Estes Park)
- July 22-24 *Dermatology* (Aspen)

- July 26-29 *Recent Advances in Rheumatic Diseases*—American College of Physicians (Estes Park)

For further information write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 East Ninth Avenue, Denver 80220.

- July 23-29 *Chronic Inflammatory Disease of the Gut*, sponsored by the American Gastroenterological Association, Aspen, Colorado. Write: Mrs. Bernie C. Kern, 740 Krameria Street, Denver 80220.

## NEW MEMBERS

*The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.*

Ray E. Allen, M.D.  
2 Plaza Drive  
Liberal, Kansas 67901

Albina Bernard, M.D.  
St. Margaret Hospital  
Kansas City, Kansas 66101

C. H. J. Chang, M.D.  
K. U. Medical Center  
Kansas City, Kansas 66103

Robert D. Crist, M.D.  
K. U. Medical Center  
Kansas City, Kansas 66103

Richard H. Gier, M.D.  
K. U. Medical Center  
Kansas City, Kansas 66103

Helen E. Hash, M.D.  
807 W. 69th Terrace  
Kansas City, Missouri 64113

Pedro L. Legaspi, Jr.,  
M.D.  
8305 Wenonga  
Leawood, Kansas 66206

Richard MacArthur  
(Student)  
K. U. Medical Center  
Kansas City, Kansas 66103

Pere A. Owen, M.D.  
1128 S. Clifton  
Wichita, Kansas 67218

David A. Rater, M.D.  
K. U. Medical Center  
Kansas City, Kansas 66103

Freddie A. Ray, M.D.  
6051 Juniper  
Shawnee Mission, Kansas 66205

Gilbert S. Santoscoy,  
M.D.  
3244 E. Douglas  
Wichita, Kansas 67208

Leona F. Therou, M.D.  
K. U. Medical Center  
Kansas City, Kansas 66103

Milt VanGundy (Student)  
K. U. Medical Center  
Kansas City, Kansas 66103



# Official Proceedings

## 1971 Meeting of the House of Delegates

Transactions of the 112th Annual Session of the Kansas Medical Society are published in this issue.

Resolutions not previously published in the JOURNAL were introduced and referred to Reference Committee A (Edward J. Ryan, M.D., Emporia, Chairman), or Reference Committee B (Robert P. Woods, M.D., Topeka, Chairman).

The resolutions are printed in numerical order under the minutes of the second House of Delegates. Although it appears in the minutes of the second House, Resolution 71-31 honoring Clarence G. Munns, the first executive director of the Society, was unanimously adopted at the meeting of the first House on Sunday, May 9, 1971. With the exception of Resolution 71-5 on guidelines for peer review, which was referred back to the Committee on Peer Review for revision, those resolutions which passed and those tabled or referred back to committee for further study are printed in their entirety. Those failing to pass are retained in the minutes at the executive office but are not recorded here.

### FIRST SESSION

The first meeting of the House of Delegates was called to order by the Speaker, Dr. Clair C. Conard, at 2:00 p.m. on Sunday, May 9, 1971, at the Ramada Inn, Downtown, Topeka.

The official minutes of the last meeting were presented and accepted as published in the JOURNAL.

Dr. Conard announced the resignation of Dr. William R. Roy as Vice Speaker, and requested nominations for that office for a term beginning immediately and concluding at the end of the annual session. Dr. M. Robert Knapp, Wichita, was elected Vice Speaker.

The primary election was held for the office of second vice president, speaker and vice speaker. Dr. Conard announced the tellers: Dr. Ivan E. Rhodes, Wichita, Chairman; Dr. Dan L. Berger, Shawnee Mission; and Dr. Robert P. Stoffer, Halstead. The election of officers for all positions will be held at the second meeting.

The Speaker introduced Mrs. Herman W. Hiesterman, Quinter, president of the Woman's Auxiliary to the Kansas Medical Society. Mrs. Hiesterman stated the Auxiliary was proud to work with the Medical Society. They had been pleased with the results of the AMA-ERF contributions and they were working on health careers, on a memorial loan fund and on drug abuse.

The chairman of each of the five commissions made his annual report to the House of Delegates.

Dr. Conard then introduced Dr. William R. Roy, Congressman from the Second Kansas Congressional District. Dr. Roy told of a committee hearing held in Topeka on April 3, and that the committee of which he is a member is studying the education of a larger number of physicians, the creation of teams of medical assistants, bringing the minority races into the health care field and student loans. It was his opinion that a bill will be prepared by this committee which will carry an appropriation between \$750 million and \$1.5 billion. He stated he would do everything he could to make a program work for giving and for receiving medical care.

Dr. Charles Brackett, Acting Vice Chancellor for Health Affairs, and Dr. William O. Rieke, the newly selected Vice Chancellor for Health Affairs, who will begin his duties on July 1, were introduced by the Speaker.

Dr. Chester M. Lessenden, Jr., Treasurer, presented the budget. He called attention to several items and recommended no change in dues for the coming year. The motion was made and seconded that the budget and dues recommendation be approved. This motion carried.

### REPORT OF THE CONSTITUTIONAL SECRETARY

Following is a summary of the membership of the Society for 1970.

Dues-paid members .....	1,485
Delinquent members .....	201
Student members .....	56
Emeritus members .....	130
Leave-of-absence members .....	39
In-service members .....	14
Personal exemption .....	9
Retired members .....	56
	<hr/>
	1,990

This compares with total membership in previous years as follows:

Year	Membership
1965 .....	1,883
1966 .....	1,884
1967 .....	1,875
1968 .....	1,895
1969 .....	1,909
1970 .....	1,921

## SPECIAL REPORTS

**The Editor**

My first report to you as editor of the JOURNAL will bear a notable resemblance to the reports of my predecessor. A year ago, in my first editorial contribution, I anticipated little change in form or content of the JOURNAL and, for better or worse, this is the case. The Editorial Board has continued the policy of the past: the effort to make the JOURNAL a worthy instrument of communication among the members of the medical profession of Kansas. We reiterate our sincere desire to have the thoughts, opinions, and recommendations of the physicians of Kansas to guide us in this effort. I believe a survey of the content of the JOURNAL will give a reasonably accurate picture of the medical activities and attitudes over the state. There are certain inherent limitations on a periodical of specific professional orientation and geographical circumscription, but as I have compared ours with those of other states, I believe it fulfills its function reasonably well, prejudice admitted.

In one area, I would be pleased to note a change but cannot. Smiling through my tears, I must report that financially we are moving from genteel poverty to gracious destitution. With an operating loss of several hundred dollars a month necessitating continuing inroads on our savings, the end of our funds is in sight. Lest this arouse any suspicion, let me note that the editor's personal bank account has followed the same general trend.

As you realize, a journal such as ours has two sources of income: subscriptions and advertising. For many years, our subscription charge has been \$4, with members receiving it for half this price. Since, obviously, the major part of our subscription list is the membership of the Society, it means an unrealistically low charge in view of the fact that it costs \$10 to \$12 to publish. In addition, we send 193 copies out in exchange for other journals which are a benefit to our medical libraries but represent no income. Further, we provide 161 free copies to students at the University of Kansas Medical Center and 66 copies to the three hospitals in the state with interns and residents, which we feel to be a worthy but not inexpensive gesture.

There is a distinct limitation of the JOURNAL in terms of advertising revenue. We are grateful to our advertisers, both local and national, but most such prospects are interested, of course, in volume circulation (witness the many unsolicited periodicals you receive), and a state journal can offer only so much in this area. We have consulted with two different advertising agencies in the hope of increasing our local advertising volume. Their response has had all the giddy enthusiasm of a patient approaching a sigmoidoscopy. Again, given the limitations imposed

by profession and geography, we are not a hot item to the Madison Avenue crowd. It would be possible to obtain more national advertising if we were to change our format and intersperse the scientific section with advertising—how much more we cannot tell—but the Editorial Board, supported by the Society, has felt that the loss in style and readability is too great a cost.

We must, then, attempt to remain solvent by an increase in the other element of our income, the subscription price. To this end, we are requesting the House of Delegates to accept our recommendation for an increase in our annual subscription rate from \$4 to \$10, continuing the same distribution as noted above.

At this time, I must report that the term of Dr. John Segerson on the Editorial Board expires. Any of you acquainted with this scholar and gentleman can understand my alacrity in recommending him for reappointment.

I would be remiss if I did not express to Mary Rogers my personal appreciation for the assistance she has given me apart from the excellence of her service as managing editor. You are all aware that she is the one who really does the work. In addition, Val Braun has kept a watchful and sympathetic eye on our accounts. True, most of what she has done has been to write me to get some more money out of our savings account because she had to buy the stamp for the letter herself, but she has done it beautifully. And the other girls in the office have helped even though the JOURNAL is not their responsibility. But it's that kind of an office.

DAVID E. GRAY, M.D.

*Editor*

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**Coordinator of Medical Services**

It is my duty this year, as Coordinator of Medical Services, to make a short report to the House of Delegates. Dr. Lucien Pyle has appeared before you in previous years in this capacity. Dr. Pyle, as you may or may not know, has retired from this division of the State Department of Social Welfare and I am taking this vacated position. You are all aware of the efforts of Dr. Pyle in the many phases of activities in Kansas medicine, his work with Kansas Blue Cross-Blue Shield and his work in helping to coordinate the implementation of Social Welfare Title XVIII and Title XIX programs and the Kansas Medical Society. I hope you will bear with me, especially at this meeting, since I am not nearly as well qualified to make this report or to answer your questions as would Dr. Pyle, if he were standing here at this time.

I started in the Division on April 1. I have been reviewing some of the things that have happened



over the year and have had contact with some of the problems confronting the Division of Medical Services. One thing I have noted and am proud to report is that from my short observation, there is, by and large, good communication between the Social Welfare Department, Division of Medical Services and the Kansas Medical Society, and individual doctors over the state. This condition exists because the Kansas physicians have made and are continuing to make a conscientious effort to provide good medical care for all patients including those who cannot afford to pay for it themselves, and at the same time using restraint in providing some of the more luxurious services available in this modern day practice.

I think it is a fact that we are all becoming more aware of the functions of the various review and utilization committees. Your President, Dr. Francis T. Collins, in the March issue "President's Message" alluded to the concept of peer review and stressed that we must help guide the direction of this concept, and certainly the Kansas Medical Society is doing just this. Continued effort is a must.

I will not bore you with statistics, but one cannot understand what is happening today without seeing a few figures. Costs through March were up a little over 10 percent, but the number of recipients was up 34 percent, which means that costs per patient were down approximately 18 percent for the total program including nursing homes, and down 10 percent excluding nursing homes.

Caseload has been climbing gradually the past year and no doubt will increase again this year, and the next year, and from now on. For *Medical Only* there were 14,587 persons (unduplicated) in 1969-70. In 1970-71, this increased to 16,356 or + 12.1 percent. The average cost of physician services is up only 1.5 percent. This again proves that the doctors are doing more than their share in providing medical care to the less fortunate and this in a large part reflects concentrated efforts on you individually, in surveillance and utilization.

Providers have given services and an increase in services (number of patients), at a steadily decreasing per unit cost. This in itself may not be good news since it could mean a gradual reduction in fees, but this really is not the case and reflects instead better utilization of services. There are areas that in some way need greater surveillance. I am most disturbed about a rapid increase in some services of which, for the present, we seem to have little control.

One observation is certainly a fact and that is the demand for medical care, and all these services by government agencies does not necessarily reflect the true and actual need for the continuance of good health and productivity.

As I said a moment ago, the number of recipients was up 34 percent. The legislature, as I'm sure you are all aware, appropriated the same number of dollars as for the year now ending. It really doesn't take much of an analysis to deduct that there just will not be enough money to pay the bills. It is doubtful that there will be a federal supplement. At a meeting last Tuesday (May 4, 1971), Dr. Collins and Oliver (Ebel) were present. This dilemma was discussed and some good suggestions were made in efforts to stretch the dollar. Again, I say the providers are trying desperately to help out.

Dr. Harder, in discussing this, said that pay tapes would be run as usual but checks would not go out to providers until after July 1. What will happen when the money runs out (December, January, February), anyone can make a guess. Dr. Harder is now collecting suggestions from providers.

In my capacity as Medical Coordinator I expect to renew acquaintances as well as make new acquaintances. I will do my best to keep the lines of communication open.

I hope for your continued support and efforts in good utilization and in utilization review. Truly evaluate the medical needs of your patients and use restraint in the areas where the success and end result of a service may not justify the expenditure. I say this not only to you, the members of the House of Delegates, but to all practicing physicians.

P. L. BEIDERWELL, M.D.

*Coordinator of Medical Services  
State Dept. of Social Welfare*

## The Executive Director

How do you express your gratitude for so many things and to so many people?

To the Kansas Medical Society for the effect it has had upon the people of this state. How rarely, over the years, has self-interest directed its activities—how often has the influence of this Society achieved progress. It would require no research at all to recall many pioneering efforts, projects originating with the Society which had not started before anywhere else. These are significant, not because they were new but because they represent progress. At a time when the establishment is shot at, when images are destroyed, it gives you a warm feeling—and a challenge—to see the oldest corporation in Kansas retain its poise (and in contrast with many others) retain the respect of the people of this state. Of course, I am aware of the criticism against the organization of medicine—but note how little of this originates within the state and how seldom is it directed against efforts of this Society. I attend many meetings, as you know, often with people outside the health field, as

for example a recent all-day session with the state Chamber of Commerce, and always is the Medical Society set apart from the others.

Of course, this would not be possible except for the members of the Kansas Medical Society. There would be no society except for the Doctor of Medicine—so this expression of gratitude is to each of you, individually and as a group. I have often said this before, I am constantly amazed by the intense interest the doctor has in his Society—how devotedly he wants his Society to defend his profession and serve the people. I know because I hear secretaries tell of problems within their states—the cohesion of the doctors in this state is not matched anywhere else. Differences of opinion on how the Society should accomplish its goal naturally exist—and exactly that makes for its strength.

A most vital and perhaps the most effective work of this Society is performed by the component society. Some are engaged in many service programs and their local influence is what gives status to the state society. So, with our gratitude also goes our praise to organized medicine at the local level where the greatest opportunity exists and where the greatest achievement has occurred. If only each society accepted the challenge as you have somehow this would react at the state level!

I should mention individual physicians for special massive contributions but the list would be endless. Your officers and your councilors, your commission chairmen, your committees have worked with unbelievable dedication to the improvement of this Society. The people who serve you in the office work with devotion for the duties afforded us. Swede and the girls are absolutely wonderful in their cooperation, their willingness and their ability. You can't adequately say thanks for that!

An extension of the arm at your state office are the secretaries in the offices of component societies. Except locally, I have the impression we do not all know how much they do for this Society every day. So, thanks for the tremendous support we receive from Dwight of Sedgwick, Martha of Wyandotte, Alliene of Johnson, Gary of Shawnee, Gene of Cowley, and Larry of Saline.

Acknowledgement of those who serve medicine in politics is also deserving. Dr. Bill Roy, who you all know was Vice Speaker of this House, gave up his practice to serve you in the Congress. We wish Dr. Roy every success.

Thanks also for absolutely innumerable services performed in your behalf by Dr. Brauchi, Dr. Speer and Dr. Steichen in the Kansas Legislature. In politics not everything everyone says is accurately interpreted. I wish I might recount the details but because of time, I will assure you this Society is

deeply in their debt. They daily performed in your behalf as no one outside the legislature can.

I remember very well what I say each year about your president. I feel I owe you this report because of my constant work with him through the year.

Never, since I have worked for you, has a president given more of his time to the Society than has Dr. Collins. It was a rare day when he did not come by the office at least for a few minutes. On almost every Thursday he gave up a half day for Society work. He attended each of the 18 Council district meetings and the 19th also which is our great new Medical Student Society. He attended uncounted other meetings, committees, legislative, with other organizations, and for the AMA.

The story of this year is not one of hours spent. No one has ever tried harder, no one ever can try harder than did Dr. Collins to serve the ideals and the practice of medicine. His patience in adversity was infinite. He was fair and courteous to everyone, but when he knew he was right he stood firm and with devastating emphasis. I have seen him succeed again and again when failure was imminent. I know, Dr. Collins, the President, has raised the stature of the Kansas Medical Society—has given you a new credibility state-wide through his timely press releases and his personal contacts—has brought new honor to his office.

And personally it has been an unforgettable year for me to have a boss who inspired confidence and overlooked errors, who encouraged and guided with such delicate precision that the pressure which must have been exerted was not apparent. And always, without exception, every decision was balanced against whether it would react to the benefit of the public, of the profession and for the best interests of the Society. You know all of this—you too have watched your president in action and I know you too want to say thanks.

The change of pace that occurs every year upon the installation of a new president is the greatest thing that happens to the Society. And next year will be dramatic. Already we have been visiting with Dr. Reals. Exciting new projects will be inaugurated, things this Society has never tried will begin. The same dedication as last year will continue—only the emphasis will change—and this annually, as I said, is the greatest thing that can happen. It will be a wonderful year and all who find the opportunity to work with Dr. Reals cannot fail to be caught up with his enthusiasm, his vigor, the inspiration he provides. We look forward with special anticipation to next year.

One of these events will be the 1972 Legislature. The red pages in your packet give you the wrap-up of this session. It will tell you what you achieved and



where you did not succeed. All in all, I think it was among the better experiences—in view of failures I saw in other areas it was unbelievable—but the bulletin will tell you about that.

I am referring now to the change of pace Dr. Reals will bring the Society next year. Legislative committees will study many subjects in depth during this interim between sessions. At least three—medical education, the use of medical assistants and professional liability—are of interest to the Society.

You have knowledgeable committees that have actively explored these fields. We now have the once-in-a-lifetime opportunity and it may be the last—to assist the legislature in progressive and wise action.

I cannot emphasize this too much. Legislative leaders beg you to help them. They want specific details. This will require time and effort of committees, and represents the new direction you will pursue next year. Dr. Reals will tell you, as time goes on, of many more. I too would like to speak of many other things, but Dr. Collins has so thoroughly kept you informed that further accounting of what has happened is not necessary, and Dr. Reals will continue this in the future. So, what remains is to say this has been a great year and for the contributions you made—thank you all.

OLIVER E. EBEL  
*Executive Director*

## Blue Shield

I am happy to report that Blue Shield is in excellent condition. The reserves are adequate, over 700,000 Kansans are members, and 90 per cent of the M.D.'s in Kansas participate. In 1970, Blue Cross and Blue Shield together paid out to health care providers in Kansas over \$200,000,000. That's all for statistics; just enough to indicate that the system of prepayment known as Blue Shield is still quite alive and viable.

I want to take about five minutes of your time now to speak briefly of some of the plans Blue Shield has made for the future—both immediate and long range.

Incidentally, Blue Shield has discussed its immediate plans throughout the state and has gone over our entire Statement of Purpose carefully with the Kansas Medical Society executive committee. I say this simply to make the point that we are still coordinating Blue Shield Planning with the appropriate interests of the medical profession and we are pleased to report that the Kansas Medical Society executive committee was most cooperative in considering these plans.

It is the duty of the chairman of the Blue Shield Board and of the Board itself to set Blue Shield goals

to the end that the organization keeps pace with changing times and moves ahead for greater service to the public and to the profession. We try to anticipate significant developments that may occur in the delivery and financing of health care and to translate them into a set of goals and objectives.

It now appears obvious to our Board and, I am sure to most of you, that our health care system is in for some significant changes in the near future. Much has been written and spoken about the inadequacies of our present system. The fee-for-service method of reimbursement is itself being challenged and many are saying that other methods should be tried. We hear of Foundations, HMO's, and Prepaid Group Practice Plans. I'm sure none of us can predict with certainty just what methods will emerge and become dominant in this evolutionary metamorphosis. We can only hope the change will be evolutionary and not revolutionary.

But to meet its obligations to subscribers, Blue Shield needs to be ready to adjust to the changing patterns of medical practice, whatever they may be. It is for this reason that one of the key objectives of this year is stated as follows:

Cooperate, if requested, with a group of physicians in some prepaid group practice program, provided approval is given by the local medical society.

In this connection, several new programs are already under discussion between Blue Shield and physicians in several parts of the state. I wish to underscore Blue Shield's willingness to discuss with the Kansas Medical Society the development and administration of a Foundation plan or plans. We have acquired a high degree of skill in marketing health benefits and in claims administration which should be useful to the Society if they should decide to move in that direction.

One hears much these days about the rising cost of health care, the need for catastrophic coverage and some form of subscriber co-payment to help reduce prepayment rates. In this connection, we have been meeting with district KMS committees on a proposed comprehensive plan which may be the best answer for voluntary plans as costs mount. While various district committees noted certain problems that need to be resolved, 17 of the 18 districts gave enthusiastic endorsement to the proposed new comprehensive plan. Before the plan is marketed, we expect to meet further with an appropriate KMS committee to resolve the aforementioned problems.

Gentlemen, let me now read the 1971 Statement of Purpose of Kansas Blue Shield and Blue Cross. I think you should be aware of this statement as you consider various resolutions that may be introduced in this House of Delegates.

## STATEMENT OF PURPOSE OF KANSAS BLUE CROSS-BLUE SHIELD

The purpose of Blue Cross-Blue Shield is to cooperate with providers in the development of comprehensive benefit programs for effective delivery of high quality health care services to subscribers at the most economical cost. While Blue Cross-Blue Shield's primary intention is to strengthen voluntary prepayment in the health care field it stands ready to cooperate with providers of services and government in the administration of tax-supported programs.

### INTERPRETATION

*Development*—Blue Cross-Blue Shield resources, money as well as manpower, are available to providers for projects aimed at improving the delivery of health services.

*Comprehensive Benefit Programs*—This term refers to methods used both for delivering and payment for care. Blue Cross-Blue Shield will cooperate with doctors in various forms of medical practice, with hospitals in the provision of extended as well as short-term care and with other institutions such as home health agencies, utilized by physicians in delivering care outside hospitals. In regard to financing care, Blue Cross-Blue Shield offers a variety of prepayment methods ranging from full coverage to substantial co-payment by subscribers.

*Effective Delivery*—Effective delivery calls for availability of high quality of health care for subscribers. Implicit in this term is reasonable compensation for participating providers. Also implied is efficient management by Blue Cross-Blue Shield.

*Health Care Services*—This term refers to personal health care services which are aimed at prevention as well as diagnosis and treatment of diseases and are performed by or under the direction of a physician.

*Voluntary Prepayment*—This term refers to nongovernmental programs in which providers and purchasers of health care may elect to participate or not, according to individual choice.

My time is nearly up. I have one or two more thoughts to leave with you. Blue Shield and Medicine need each other—Blue Shield needs physicians because the subscribers have confidence in a system of prepayment that physicians participate in and assume some responsibility for—Medicine needs Blue Shield because it gives us a major instrument of medical care financing in which we have a controlling voice. In spite of the problems and complexities, in spite of the harassment by a few, I am convinced that the vast majority of physicians in Kansas want to continue this effective partnership that has weathered nearly 25 years of change.

The human body reacts to strange protein in a violent manner. The human mind likewise reacts to a strange or new idea in a similar manner. If we watch ourselves honestly, we shall often find that we have begun to argue against a new idea before it has been

completely stated. I hope no such reaction will be generated that will hinder the mutually successful activities of the Kansas Medical Society and Blue Shield.

During the next 12 months you will hear about Foundations, HMO, HCC, FHC and HEW until you are sick of them. These all mean changes. I hope we will be able to face these changes with all the determination and courage we can muster, realizing full well that there are some things in life more difficult than a three-foot putt.

CARL C. GUNTER, M.D.  
*President*

### The President

Just a year ago I assumed the office of president of the Kansas Medical Society. At that time I set several goals. Now that my term is nearly over, I would like to give a brief recap of this past year. My primary goal was to have "a positive, constructive, action-oriented year." My means of accomplishing this goal was stated by the phrase, "Planning without action is futile—Action without planning is fatal." The specific courses of action stated were, first, take a positive, unemotional stand in all matters; second, make our stand known; and third, to use forceful, action-oriented communication.

We have planned—and we have acted.

Some of the matters on which we did take a stand include:

1. Foundations.
2. Peer review, including utilization as opposed to the PSRO concept as defined by the government.
3. The delivery of health care in all its facets.
4. Welfare and all the associated problems.
5. Medical education in all the phases as well as working on the phases of training of support personnel.
6. Legislative matters for the benefit of Kansas citizens.

Some of the ways we made our stand known include:

1. Peer review
  - working on the AMA guide for peer review.
  - moderating a district meeting in Phoenix.
  - conducting a workshop panel for AMA in Chicago in May.
2. Responses to requests and opinions on the President's Health Message.
3. Congressional hearings held in Topeka in April.
4. Conducting the questionnaire on extra activities of physicians for time donated to public works.



5. Participated in an AMA panel on Ethics in Medicine.

Some of the ways we used forceful, action-oriented communication included:

1. Publishing the "President's Letter."
2. Information and education usage
  - reports from Hank (Parkinson & Associates).
  - reports from editors.
  - editorials.
  - reports to the legislature.
  - letters to me, pro and con.

I have answered every letter addressed to me as well as many others.

3. We have helped the councilor be more truly representative of his local members.

4. Established a legislative committee which worked well in some areas, but needs to be improved in others. It is important that this work well to help guide the executive committee on legislative matters and how they affect Society policy.

5. Involved some of the younger members of our Society in many committee activities.

6. Involved medical students in many committee activities.

7. Worked hard with Blue Shield and Welfare and HIC in peer review.

8. Attended all 18 councilor district meetings to give opportunity to have discussions about Society activity.

9. Established 24-hour, seven-day-a-week telephone service.

The planning and action has been jointly achieved. By your cooperation and unselfish hard work, we have reached many of our goals. Many of the activities are only started and will continue in response to the ever-changing situations. Under the leadership of our new president, many new challenges will be faced.

I cannot make a summary report without talking about our office staff. The girls in the office, Val, June, Velma, and Mary with the JOURNAL are superb. They have given their utmost in the demands I made on their time with the various phases of the society work, letters and report. I carried a tape recorder in my car and as I thought of things to be done, assignments or suggestions for committees, I dictated them while on the road. I also taped my letters in the evenings. June bore the brunt of most of this and she expected a tape nearly every time I came to the office which was an average of three to four times a week, in addition to every Thursday for longer sessions. I cannot thank them enough for making my job so much easier. We are fortunate to have such an efficient group of office help.

Swede wears two hats, for he also serves KaMPAC part time. At the various committees and meetings up to and including this annual meeting he has been

very efficient, thinking of all the details and seeing that they are attended to. He is expert in arrangements and serves the Society well in this capacity. Thank you, Swede, for all the areas in which you helped so much to make my plans work.

Those of you who have never seen Oliver in action will never understand how fortunate we are to have such a completely dedicated individual as our executive director. I have never before known a person who has his capabilities and finesse and who is completely dedicated to the Kansas Medical Society goals. Certainly one of the "fringe benefits" of being president is the opportunity to know, work with and receive guidance from Oliver. His thought and action at all times is KMS first. KMS and the citizens of Kansas are much better off because he represents us in the legislature. I received many letters and comments from members of the legislature commending him for being genuinely helpful in their deliberations. Seeing him represent us and the people of Kansas before legislative hearings as well as service clubs and other areas is very heartwarming to me. Ollie, I can never truly express my appreciation for all the ways you have been my "right hand man" this past year. Thank you so much.

In summary, I have planned and worked. You have cooperated and worked. Together we can continue to go forward. Thank you for the privilege of serving as your president.

FRANCIS T. COLLINS, M.D.  
*President*

## SECOND SESSION

The second session of the House of Delegates was called to order by the Speaker, Clair C. Conard, M.D., at 8:30 a.m. on Wednesday, May 12, 1971, at the Ramada Inn, Downtown, Topeka.

Ballots were distributed for the election of officers, speaker, and vice speaker.

The tellers reported the results of the election as follows:

PRESIDENT-ELECT: Kenneth L. Graham, Leavenworth

FIRST VICE PRESIDENT: Thomas F. Taylor, Salina

SECOND VICE PRESIDENT: John N. Blank, Hutchinson

CONSTITUTIONAL SECRETARY: Emerson D. Yoder, Denton

TREASURER: Chester M. Lessenden, Jr., Topeka

AMA DELEGATE: John C. Mitchell, Salina

AMA ALTERNATE DELEGATE: Thomas P. Butcher, Emporia

SPEAKER: Clair C. Conard, Dodge City

VICE SPEAKER: M. Robert Knapp, Wichita

The caucus of the Council Districts announced the

selection of the following to serve as councilors and alternates from their respective districts:

DISTRICT 6: Richard R. Beach, Topeka, Councilor; Donald R. Pierce, Topeka, Alternate.

DISTRICT 7: Edward G. Campbell, Emporia, Councilor; Leo F. McKee, Cottonwood Falls, Alternate.

DISTRICT 10: Richard M. Glover, Newton, Councilor; John B. Jarrott, Hutchinson, Alternate.

DISTRICT 11: Warren E. Meyer, Wichita, Councilor, to fill the unexpired term for M. Robert Knapp; H. Thomas Gray, Wichita, Alternate.

DISTRICT 12: Vernon W. Filley, Pratt, Councilor; alternate not yet selected.

DISTRICT 16: Herman W. Hiesterman, Quinter, Councilor; Carl C. Gunter, Quinter, Alternate.

DISTRICT 18: Delmont C. Hadley, Ottawa, Councilor; David A. Leitch, Garnett, Alternate.

### RESOLUTION 71-1

#### AMA Membership

WHEREAS, Organized medicine has been represented by the American Medical Association and its various state and component county associations for 120 years; and

WHEREAS, The American Medical Association performs functions and provides information to physicians in such areas as scientific, educational, services to members, legislative and governmental, through its many meetings and publications; and

WHEREAS, The individual practicing physician needs to have a mechanism to make his opinions known to organized medicine on a national level in order to help guide the changes in the total health care problems; and

WHEREAS, The Kansas Medical Society is one of the few states that still require compulsory membership to the AMA; therefore, be it

*Resolved*, That the Kansas Medical Society at its 1971 House of Delegates strongly support the AMA principles and goals and encourage its individual members to belong to the AMA for the foregoing reasons; but, be it further

*Resolved*, That the Kansas Medical Society change its By-Laws in Sections 1.1 and 11.43 to delete the requirement for compulsory American Medical Association membership.

### RESOLUTION 71-2

#### Fee for Collecting AMA Dues

WHEREAS, It has come to our attention that the AMA pays a certain fee to the state societies for collecting their dues; and

WHEREAS, In the case of Kansas, the local societies are responsible for billing and collecting all dues; and

WHEREAS, Previous efforts to obtain a ruling on the possibility of sharing this fee with the local societies has failed; therefore, be it

*Resolved*, That the House of Delegates of the Kansas Medical Society instruct the Executive Director of this Society that fifty (50) per cent of this fee be distributed to the component societies on the basis of their American Medical Association dues paying membership.

### RESOLUTION 71-3

#### AMA Membership Opinion Polls

Not adopted.

### RESOLUTION 71-4

#### Joint Commission on Accreditation of Hospitals

WHEREAS, In the opinion of most practicing physicians, Joint Accreditation Commission inspectors criticize insignificant and minor details; and

WHEREAS, These inspectors presume to dictate the local practice of medicine; and

WHEREAS, The Joint Commission as represented by these inspectors has arbitrarily established standards and regulations which are impractical for good patient care in all hospitals; therefore, be it

*Resolved*, That the Kansas Medical Society request the American Medical Association representatives on the Joint Commission and the Kansas delegates to the American Medical Association direct their efforts toward placing this function in practical and workable perspective; and, be it further

*Resolved*, That letters expressing dissatisfaction of such investigations and copies of this resolution be sent to the presidents of all state medical societies and to all organizations which comprise this Commission.

### RESOLUTION 71-5

#### Peer Review Guidelines

Referred to the Committee on Peer Review for revision.

### RESOLUTION 71-6

#### Peer Review

WHEREAS, There are many concepts of peer re-



view and how this review shall be done; and

WHEREAS, The Kansas Medical Society has not adopted an official policy on the overall subject of peer review; therefore, be it

*Resolved*, That the Kansas Medical Society adopt as a policy statement the following:

The Kansas Medical Society is in favor of and will promote the execution of peer review only if it is truly *peer* review—that is, review of physicians by *practicing physicians* of Kansas; and, be it further

*Resolved*, That the Peer Review Committee continue its efforts and that this committee contact the component societies for recommendations regarding peer review and that a revised set of guidelines be presented to the Fall meeting of the Council and that Council recommendations be presented to the House of Delegates for adoption.

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## RESOLUTION 71-7

### Councilor Voting

WHEREAS, The councilor is most knowledgeable in the functions of the Society by virtue of his position and experience; and

WHEREAS, It is indefinite from a perusal of the Constitution and By-Laws whether the councilor is or is not a voting member of the House of Delegates; therefore, be it

*Resolved*, That the councilor shall be a voting member of the House of Delegates separate from the number of authorized delegates of his component society; and be it further

*Resolved*, That the alternate shall exercise the vote in the absence of the councilor.

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## RESOLUTION 71-8

### Council Reorganization

Not adopted.

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## RESOLUTION 71-9

### Revision of Section 6.6

*Resolved*, That the By-Laws be amended in Section 6.6 by deleting the first four (4) sentences, and by inserting in their place the words:

The Council shall annually at the conclusion of the annual session select three (3) physicians who are members of this Society, who together with the two (2) most recent living past presidents shall comprise the nominating committee. The Council shall name a chairman.

and that the remainder of Section 6.6 shall be retained.

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## RESOLUTION 71-10

### Solicitation of Votes

*Resolved*, Section 6.73 of the By-Laws of the Kansas Medical Society titled "Solicitation. . . Any member judged by the Council to have solicited votes for himself shall be ineligible for office for two (2) years" be rescinded.

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## RESOLUTION 71-11

*(This resolution was tabled.)*

### Medical Politics

*Resolved*, The candidates for offices within the Kansas Medical Society shall, at least sixty (60) days prior to election, have their views on major issues confronting the profession *in a special mailing of the Kansas Medical Society*. Such views can be developed by an appropriate questionnaire, prepared by the Editorial Board of the JOURNAL and submitted to each candidate for response.

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## RESOLUTION 71-12

### KMS Information Brochure

WHEREAS, There is a need to inform the new members of the Kansas Medical Society of the rights, privileges and responsibilities of membership; and

WHEREAS, There is a need for information to new members of the Kansas Medical Society regarding insurance and retirement benefits available through the Kansas Medical Society; therefore, be it

*Resolved*, That the Kansas Medical Society approve the publication of a brochure for the information of its new members; and be it further

*Resolved*, That the initial printing be ample for distribution to all members.

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## RESOLUTION 71-13

### Medicine and Religion

WHEREAS, The cooperative activity of physicians and clergy in the dealing with and care of the ill patient can be improved by better understanding and communication between the two professions; therefore, be it

*Resolved*, That the Society support and encourage the editorial board of the JOURNAL OF THE KANSAS

MEDICAL SOCIETY to include in the JOURNAL a monthly feature dealing broadly with religion and medicine where applicable.

### RESOLUTION 71-14

#### Infant Mortality

WHEREAS, The infant mortality in the United States is declining, but at a less rapid rate than in the period 1933-1957; and

WHEREAS, Many controllable factors operate prior to delivery, at the time of delivery, and following delivery to influence infant mortality; and

WHEREAS, Responsibility and control of these obstetric and pediatric factors are shared by the pediatrician, obstetrician, and family practitioner; therefore, be it

*Resolved*, That knowledge and skill in both obstetric and pediatric techniques are important and necessary for all physicians with responsibility in this area, and be it further

*Resolved*, That training programs in obstetrics and pediatrics should overlap so that both specialists are trained in each others' discipline and that a clear definition of the time when the responsibility of the obstetrician ends and the pediatrician begins is established, and that special training in infant intubation and resuscitation be included; and be it further

*Resolved*, That training in Family Practice should emphasize preventive techniques and recognition of anticipated difficulty so that early referral to appropriate specialists and newborn care centers be made; and be it further

*Resolved*, That design, development and construction of newborn intensive care units, staffed by trained personnel, should receive equal emphasis in medical centers throughout the state with that of other and present intensive care units; and be it further

*Resolved*, That this resolution be transmitted to the University of Kansas Medical Center, Departments of Obstetrics, Pediatrics, and Family Practice; to the American College of Obstetrics and Gynecology and the American Board of Obstetrics and Gynecology; to the American Academy of Pediatrics and the American Board of Pediatrics; to the American Academy of Family Practice; and to the Council on Medical Education of the American Medical Association.

### SUBSTITUTE RESOLUTION 71-16/71-18

*(Resolutions 71-16 and 71-18 were combined in this substitute resolution.)*

#### CHP/RMP Programs

WHEREAS, The Kansas Medical Society combined its

committees to work together in the area of CHP and RMP; and

WHEREAS, The Kansas Medical Society has supported the aims and fundamentals of the CHP and RMP programs; and

WHEREAS, The physicians of Kansas have been repeatedly advised to actively participate in the CHP and RMP programs; and

WHEREAS, These physicians have been chosen at random and may have less interest and may less adequately represent the medical profession; therefore, be it

*Resolved*, That each component medical society in each RMP/CHP area recruit and instruct a slate of knowledgeable physician-members who will represent their medical society in the areawide health planning councils; and, be it further

*Resolved*, That local (or areawide) initiative must be the basis for comprehensive health planning for both RMP and CHP; and, be it further

*Resolved*, That it will be the responsibility of the local county medical societies to recommend projects to the areawide health planning council for both CHP/RMP which will improve the quality of medical care in their areas.

### SUBSTITUTE RESOLUTION 71-17

*(This resolution was tabled.)*

#### Blue Shield Co-Insurance Plan

*Resolved*, That the Kansas Medical Society approve a Blue Shield co-insurance plan exclusively, to be used as a pilot study; and, be it further

*Resolved*, That the co-insurance plan be presented, with all benefits involved, to the local society for approval before implementation by Blue Shield.

### RESOLUTION 71-18

#### Joint Committee—RMP-CHP

See Substitute Resolution 71-16/71-18.

### RESOLUTION 71-19

#### Graduate Medical Education (Interns-Residents)

WHEREAS, The need for additional physicians in many specialties including Family Practice is apparent to the medical profession in this state and to the public; and

WHEREAS, There is evidence to indicate that physicians tend to locate in the vicinity of their intern and residency training; and



WHEREAS, Kansas provides internships in Kansas City and Wichita only and residency training (except for psychiatry which is also conducted in Topeka) in Kansas City and Wichita only; and

WHEREAS, Three component societies of the Kansas Medical Society have indicated firm interest in the development of graduate medical education programs; and

WHEREAS, The cost of such graduate medical education programs should not be borne by the individual hospitalized patient; therefore, be it

*Resolved*, That the Legislature be requested to continue and expand its support of medical education in the state of Kansas and specifically to continue support of graduate medical education as commenced by House Bill 2046 of the 1970 Session; and, be it further

*Resolved*, That the Legislature and the University of Kansas Medical Center be encouraged by the Kansas Medical Society to take effective steps to increase the number of students to be graduated.

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## RESOLUTION 71-20

### Postgraduate Education

WHEREAS, Continuing education is a necessity for every practicing physician; and

WHEREAS, The circuit courses offered in Kansas represent one, but only one, part of a broad range of educational opportunities; and

WHEREAS, The Department of Postgraduate Education at the University of Kansas School of Medicine cooperates closely with the Kansas Medical Society; therefore, be it

*Resolved*, That the Kansas Medical Society continue to be a sponsoring agency for the efforts of the Department of Postgraduate Education.

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## RESOLUTION 71-21

### Clinical Traineeship Study

WHEREAS, Methods of continuing education involve more than passive attendance at courses, symposia, workshops, etc.; and

WHEREAS, One of these better methods is the so-called "clinical traineeship" in which a physician works in a teaching hospital for a substantial period of time; and

WHEREAS, Participation in such traineeships presents economic difficulties for the trainee; and

WHEREAS, The trainee's practice needs coverage during his traineeship; therefore, be it

*Resolved*, That a study group be formed to explore this problem and propose possible solutions.

## RESOLUTION 71-22

### Educational Membership

WHEREAS, The Wyandotte County Medical Society has a category of membership called Educational Members which includes students, interns and residents; and

WHEREAS, This membership category has all the privileges of active members at reduced dues; and

WHEREAS, The Kansas Medical Society By-laws state that interns and residents have full privileges while in full time training; therefore, be it

*Resolved*, That this House of Delegates urge all component societies to amend their by-laws to provide for a similar category of membership in the component society.

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## RESOLUTION 71-23

### Future Care Committee

WHEREAS, Matters pertinent to the future of medical care in Kansas remain of prime importance to patients and physicians; and

WHEREAS, The evolving process and planning remains in substantial flux; therefore, be it

*Resolved*, That;

1. The Kansas Medical Society continue the Committee on Future Medical Care.

2. The Kansas Medical Society urge the Kansas Legislature to appoint a multidisciplinary committee. In order to design and present to the legislature a workable, acceptable and effective program for the development of allied health in the state of Kansas, the Kansas Medical Society will be happy to supply suggestions for membership to the multidisciplinary committee.

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## RESOLUTION 71-24

### Society Legislative Policy

WHEREAS, Legislation affecting the health of the public and the practice of medicine is becoming increasingly important; and

WHEREAS, Society position on legislation has in the past frequently been defensive and hastily determined in time of crisis; and

WHEREAS, The Society needs a permanent structure for continuously and carefully considering legislation; therefore, be it

*Resolved*, That the Executive Committee be directed to create an ongoing and positive Society position on health legislation through:

1. Establishment of a state telephone network which by chain reaction can quickly reach a contact in every legislative district in Kansas; and

2. Consideration of the creation of a department of legislative analysis within the Executive Office.

## RESOLUTION 71-25

### Retirement Plan

WHEREAS, Many plans are available to physicians on an individual basis; and

WHEREAS, These plans have limitations because of the fact they are sold and purchased on an individual basis; and

WHEREAS, The Services to Members Committee has met and discussed the need for the Kansas Medical Society to have a sponsored plan whereby its members might be able to take advantage of mass purchasing power while still maintaining a plan suited to the individual physician's needs and desires; therefore, be it

*Resolved*, That the Kansas Medical Society endorse the concept of making available to all of the members retirement plans through the marketing division of Columbian Securities Corporation, and such investment and fringe benefit vehicles offered by Security Benefit Life and Security Management Corporation, which are all Kansas-based companies.

## RESOLUTION 71-26

### AMA Cancer Committee

WHEREAS, There has been a sustained effort for the past year to establish a cancer committee of the American Medical Association; and

WHEREAS, Such a committee offers little possible benefit and great possible obstruction; and

WHEREAS, The AMA has a standing policy against disease-oriented committees; therefore, be it

*Resolved*, That the Kansas Medical Society continue to oppose actively the creation of a cancer committee by the American Medical Association; and, be it further

*Resolved*, That Kansas delegates to the American Medical Association be made aware of the problem; and, be it further

*Resolved*, That copies of this resolution be forwarded to Dr. Kenneth Sawyer, Denver, Colorado, and Dr. William Barclay, of the AMA staff.

## RESOLUTION 71-27

### Kansas Foundation

WHEREAS, The Kansas Medical Society needs a

vehicle to enable it to continue to provide leadership in the ever changing patterns of the delivery of health care; and

WHEREAS, Numerous individuals within the Society, especially the president, have spent a great many hours in meetings learning about the operations of Foundations; and

WHEREAS, The president has personally explained the Foundation concept to each of the Council districts and has published such explanation in the JOURNAL; and

WHEREAS, Foundations have been studied in detail by the Executive Committee which body prepared the Articles of Incorporation, the Constitution and the By-Laws for such Kansas organization; and

WHEREAS, Other Society committees, including Medical Advisory, Surgical Advisory, Utilization, Advisory to Welfare, and Peer Review, have studied this subject; and

WHEREAS, Membership and participation in a Foundation is voluntary for each physician and may be altered at his discretion; and

WHEREAS, A physician's relationship within or outside a Foundation in no way affects his membership in a component society or in the Kansas Medical Society; and

WHEREAS, Some component societies are at this time exploring the formation of Foundations within their boundaries which activity is endorsed and does not conflict with a Foundation at the state level; therefore, be it

*Resolved*, That the Council is hereby directed to create a Foundation and to obtain a charter for its operation under the auspices of the Kansas Medical Society; and, be it further

*Resolved*, That no activity be engaged in by such corporation even after the charter has been issued until after a critical review of the By-Laws by the Council of the Kansas Medical Society and affirmative action has been taken by the House of Delegates to place the Kansas Foundation into operation.

## RESOLUTION 71-28

### Medical Student Membership

WHEREAS, The By-Laws authorize the Council to charter a Student Medical Society; and

WHEREAS, Some component societies have requested authorization to invite individual medical students to join their component societies; therefore, be it

*Resolved*, That the By-Laws be amended in Section 11.41 by deleting the period at the end of the second paragraph and adding the words "or upon invitation by a component medical society."



**RESOLUTION 71-29****Delegate Strength**

WHEREAS, The By-Laws do not set a specific date by which the number of delegates to the House of Delegates of the Kansas Medical Society from each component society are to be selected; and

WHEREAS, Communication between the state society and its many component societies can be better maintained, and to know the delegate strength earlier is important as far as planning for conducting the business of the House; therefore, be it

*Resolved*, That the By-Laws be changed in the second sentence of Section 11.91 to read that the number of delegates of all component societies be determined on the basis of information regarding membership available to the state society office as of March 15 of each year; and, be it further

*Resolved*, That a list of delegates and alternates be submitted to the Executive Director no later than March 20 of each year for the purpose of publishing the names in the program of the annual meeting in May.

**SUBSTITUTE RESOLUTION 71-30****Licensure by Endorsement**

WHEREAS, Kansas is in great need of additional physicians; and

WHEREAS, The Kansas Medical Society should exert an effort to attract qualified physicians to this state; and

WHEREAS, Physicians of good character, fully qualified and licensed to practice in other states by virtue of successful completion of a state medical license examination or the examination of the National Board of Medical Examiners must in some cases meet additional requirements including re-examination in order to be licensed in Kansas; and

WHEREAS, These requirements are unnecessarily restrictive and particularly discriminatory to the foreign medical graduate; and

WHEREAS, Some of these restrictions to licensure by endorsement are not required by statute; therefore, be it

*Resolved*, That the president of the Kansas Medical Society be directed to appoint a special committee of the Society under the Commission on Health Services to:

1. convey the desire of the Society to remove restrictions to licensure by endorsement to physicians who are otherwise qualified;

2. request a meeting with the Kansas State Board of Healing Arts to study changes in policy or statutes necessary to achieve that objective;

3. report their findings to the next meeting of the Council for appropriate action; and, be it further

*Resolved*, That a copy of this resolution be forwarded to Francis J. Nash, M.D., secretary of the Kansas Board of Healing Arts.

**RESOLUTION 71-31**

*(Adopted at the first meeting of the House of Delegates, May 9, 1971.)*

**Clarence G. Munns**

WHEREAS, Clarence G. Munns served with distinction as the first executive secretary of the Kansas Medical Society; and

WHEREAS, He resigned this position to serve in the Armed Forces during World War II; and

WHEREAS, He established a business following the war in which he has retained close contact with physicians; therefore, be it

*Resolved*, That Clarence G. Munns be awarded the Outstanding Service Award which shall read:

The Kansas Medical Society awards to Clarence G. Munns this Outstanding Service Award for his dedicated good citizenship and for the distinguished and continual service he has rendered to this Society and its members.

Clarence G. Munns is declared to be an honorary member of the Kansas Medical Society.

May 9, 1971.

**RESOLUTION 71-32****Kansas School Health Advisory Council**

WHEREAS, The Kansas Medical Society was one of the founders of the Kansas School Health Advisory Council, formed in 1958 in cooperation with KUMC, the KU College of Education, the State Department of Education and the State Department of Health, among others; and

WHEREAS, Three KMS physicians have been president of this group; and

WHEREAS, The medical aspects of school health affect the physician in his daily practice and have a leadership position through the Council in developing a handbook of Emergency Standing Orders and a manual on Athletic Injuries; and

WHEREAS, From 1958 to 1967 its contribution of \$500 per year was forthcoming, but was not given in fiscal 1968/69 of the Kansas School Health Advisory Council—but was promised from the KMS office in writing, but never given; therefore, be it

*Resolved*, That for fiscal 1970/71 (October

KUMC postgraduate course is the annual meeting) the KMS pay its currently due contribution (tax deductible) of \$500 and continue on an annual basis.

### RESOLUTION 71-33

#### Commission on Scientific Study

WHEREAS, The Kansas Medical Society has recently given additional representation to 14 specialty societies in the House of Delegates; and

WHEREAS, The Kansas Medical Society has recognized the need to provide a method for these groups to have a method of bringing possible scientific and medical practice methods to this Society through improved coordination between the Specialty Societies; and

WHEREAS, By the adoption of Resolution 70-31 this commission consists of one member from each specialty society and such additional members as may be desired; and

WHEREAS, The Commission for Scientific Study has also been empowered to serve in the liaison capacity to promote coordination between the Medical Society and specialty societies organized within the state; therefore, be it

*Resolved*, That the name of the Commission for Scientific Study be changed to Commission for Medical Practice and Specialty Societies; and, be it further

*Resolved*, That it is recommended that resolutions from specialty societies which deal with medical practice matters and are intended for action by House of Delegates shall to such degree as is practical be first submitted to this commission for study and approval.

### RESOLUTION 71-34

#### Increasing the Number of Physicians in Kansas

WHEREAS, There is a need for more doctors in Kansas; and

WHEREAS, The Wyandotte County Medical Society has an interest in relieving this shortage; therefore, be it

*Resolved*, That the Wyandotte County Medical Society encourages the Kansas Medical Society to work with the University of Kansas and do everything in its power to increase the number of physicians graduated and practicing in Kansas.

### RESOLUTION 71-35

#### AMA-ERF Contributions Credited to Woman's Auxiliary

WHEREAS, Physicians are encouraged to contribute through AMA-ERF to the medical school of their selection; and

WHEREAS, the Woman's Auxiliary to the Kansas Medical Society has regularly made significant contributions to AMA-ERF; and

WHEREAS, This is a major project of the Auxiliary, both in Kansas and nationally; and

WHEREAS, A number of states have requested all AMA-ERF contributions that are given from the state to whatever school may be selected to be credited to the Woman's Auxiliary of that state; therefore, be it

*Resolved*, That the Council in session on Sunday, January 24, 1971, recommends to the American Medical Association that all AMA-ERF contributions from Kansas, whether given by individuals or organizations within this state and whether designated for the University of Kansas School of Medicine or some other medical school, be credited to the Woman's Auxiliary to the Kansas Medical Society.

### RESOLUTION 71-36

#### Reimbursement for Services Provided by Non-Participating Physicians

WHEREAS, Resolution 70-58, adopted by the House of Delegates, directs the Commission for Sociology and Economics to recommend to the Council Society policy on the subject of reimbursement for non-participating physicians in Blue Shield; and

WHEREAS, Component medical societies, having obtained the opinions of their members, report a considerable majority opinion which is supported by the Blue Shield Study Committee; therefore, be it

*Resolved*, That solely for the protection of the Blue Shield subscriber reimbursement for services rendered by a non-participating physician be based upon the same reimbursement policy as is in effect for participating physicians up to range maximums; and be it further

*Resolved*, That payment for services rendered by a non-participating physician be made directly to the patient, except in instances where the patient requests the physician to accept an assignment, under which circumstances the check shall be made payable both to the patient and to the physician; and be it further

*Resolved*, That a study be made by Blue Shield



to determine the overall effect of the policy on Blue Shield participation and the cost of this policy change after a trial period of 18 months.

### RESOLUTION 71-37

#### Proration

*Be It Resolved*, That the Kansas Medical Society opposes proration for the following reasons:

1. Proration represents lack of planning, inability to project needs, failure to budget adequately money needed to finance the many programs and promises of welfare with no limitations on the demand of contracted services.

2. The Kansas Medical Society urges that satisfactory documentary evidence be supplied by the Board of Social Welfare for proration before the Kansas Medical Society supports the Title XIX program throughout the state.

### RESOLUTION 71-38

#### Closed Panel Capitation-Type Contract

WHEREAS, The Kansas Blue Shield has become interested and directly involved in comprehensive, closed panel type practice, by virtue of negotiation with a group of Wichita doctors; and

WHEREAS, It is imperative that the quality of health care services in Kansas be maintained at its present high level; therefore, be it

*Resolved*, That all such programs be reviewed and approved by the appropriate local county medical society; and, be it further

*Resolved*, That Kansas Blue Shield not enter into negotiations on this type of contract until the pre-paid plan has been sanctioned by both the county and state medical society.

### RESOLUTION 71-39

#### Small Component Societies

*Resolved*, That the By-Laws be amended to read as follows:

- 11.26 If the active membership of a component society falls below four (4) in number, its charter shall be revoked and the members reassigned by the council to one of the following alternatives.
- 11.261 Attach the entire membership to the nearest component society, or
- 11.262 Attach the entire membership to any adjacent medical society by unanimous request of the members, or

- 11.263 Attach the members separately to adjacent medical societies for reasonable cause.

### RESOLUTION 71-40

*(This resolution was adopted unanimously.)*

#### Blue Cross-Blue Shield Merger

WHEREAS, A committee, of which Mr. Sam J. Barham, president of Kansas Blue Cross-Blue Shield is chairman, recommends that the National Association of Blue Shield Plans and the Blue Cross Association merge; and

WHEREAS, For many historic and obvious reasons, this is not in the best interest of either national association, nor would it be in the best interest of either association in Kansas; therefore, be it

*Resolved*, That the Kansas Medical Society vigorously opposes the merger of the two national associations; and, be it further

*Resolved*, That the president of this Society be directed to express this opinion in a letter to the chairman of the Board of Kansas Blue Cross, to the chairman of the Board of Kansas Blue Shield and to president of each Kansas association.

### RESOLUTION 71-41

*(This resolution was tabled.)*

#### Administrative Separation of Blue Cross-Blue Shield

WHEREAS, The House of Delegates in 1970 recommended to Kansas Blue Cross and Blue Shield that the administrative leadership of the two associations be distinctly separated; and

WHEREAS, This recommendation was rejected by the governing body of both organizations as being not in the best interest of the subscriber; and

WHEREAS, The Kansas Medical Society reaffirms its position that separation of the two organizations at the administrative level would in fact be to the best interest of the subscriber; therefore, be it

*Resolved*, That the Kansas Medical Society will withdraw its endorsement of Kansas Blue Shield and discontinue any real or implied sponsorship as of January 1, 1972, unless administrative separation of the two organizations has been accomplished as of that date.

### RESOLUTION 71-42

#### Utilization Review in Small Hospitals

WHEREAS, The Kansas Medical Society has prepared guidelines for hospital based utilization review committees; and

WHEREAS, Utilization review committees which have signed an agreement to perform according to the standards set forth in the guidelines are offered an incentive by Blue Cross-Blue Shield to the effect that their decisions will be honored without question except for quarterly performance review; and

WHEREAS, Hospitals which have not signed such agreement are in continual jeopardy of retroactive rejection of claims; and

WHEREAS, An increasing number of larger hospitals in Kansas are participating under such agreement; and

WHEREAS, Your Committee on Hospitals, meeting with the Board of Trustees of the Kansas Hospital Association, jointly recommends the following; therefore, be it

*Resolved*, That in areas where as many as three (3) small hospitals, especially those with fewer than twenty-five (25) beds, are located within a convenient area, that a single utilization review committee may be established to serve them all; and, be it further

*Resolved*, That the Committee on Hospitals be directed to encourage such combination wherever feasible; and, be it further

*Resolved*, That when the above has been accomplished, the utilization review committee be encouraged to agree to perform according to the recommended standards established by the Medical Society for utilization review.

### RESOLUTION 71-43

#### Past Presidents

Not adopted.

### RESOLUTION 71-44

#### Payment for Services at Usual, Reasonable and Customary Fees

WHEREAS, The Kansas State Legislature has failed to appropriate sufficient funds for operation of the Department of Social Welfare for fiscal 1971-72; and

WHEREAS, The Department of Social Welfare will not have sufficient funds to buy physicians services for its clients at usual, reasonable and customary fees during all of fiscal 1971-72; and

WHEREAS, Under proration the client, the legislature and the public at large remain unaware of the financial contribution made by the attending physicians; therefore, be it

*Resolved*, That the Kansas Medical Society ask the Department of Social Welfare of the State of Kansas to buy physicians services at usual, reasonable and

customary fees until all monies available for such fees is exhausted, in lieu of proration.

### RESOLUTION 71-45

#### Amphetamines

WHEREAS, Amphetamines are considered to be a dangerous drug; and

WHEREAS, The dispensing and sale of amphetamines is on the increase, and many drug dependent individuals get their pills from physicians for various complaints; and

WHEREAS, Their continued use cause increased hyperactivity, erratic behavior and addiction which often leads to homicidal and suicidal tendencies; and

WHEREAS, There are very few justifiable therapeutic uses for the amphetamines in today's practice; therefore, be it

*Resolved*, That the physicians of Kansas affirm to the public that the amphetamines are a dangerous drug; and, be it further

*Resolved*, That the Kansas Medical Society join with the Kansas Academy of General Practice in encouraging the physicians of Kansas to cease writing prescriptions for amphetamines, except for a few specific medical reasons and to discourage their use as a weight reduction medication.

### RESOLUTION 71-46

*(This resolution was tabled.)*

#### Kansas Blue Shield

WHEREAS, Kansas Blue Shield, a tax exempt organization, was founded by the Kansas Medical Society for the purpose of making medical care available to the medically indigent, a purpose for which Kansas Blue Shield has no further direct responsibility; and

WHEREAS, Kansas Blue Shield has grown to the degree that it is the largest health insurance carrier in Kansas and has grown closer in operation to the dictates of the National Association of Blue Shield Plans and National Blue Cross with only de facto control by the Kansas Medical Society; and

WHEREAS, At the 1970 meeting of the House of Delegates of the Kansas Medical Society, Resolution 70-62 titled "Separation of Blue Cross-Blue Shield" was adopted; and

WHEREAS, Since the passage of this resolution, the following events have occurred which represent the deterioration of Blue Shield relationships with the Kansas Medical Society—events which clearly contravene the stated policies of the Kansas Medical Society:

1. The Kansas Blue Shield Board of Directors has



seen fit to defy the Kansas Medical Society by refusing to separate the administration of Kansas Blue Shield from that of Kansas Blue Cross; this despite the intent of this House that it should be done.

2. Kansas Blue Shield has seen fit to defy the Kansas Medical Society by refusing to reimburse non-participating physicians on the same basis as participating physicians, a policy believed by this Society to be beneficial to the Blue Shield policy owner; this despite the intent of the Council that it should be done.

3. No clear distinction has been made between Kansas Blue Cross and Kansas Blue Shield, as evidenced by membership cards, advertising and billing procedures; thus, the public continues to confuse the two. This has been carried on despite the intent of this House that it should not be so.

4. The Kansas Blue Shield plans and policies grow continually closer to those of National Blue Cross as evidenced by Blue Shield administration advocating the merger of National Blue Cross and Blue Shield; this despite the intent of this House that it should not be so.

5. This House was to receive an *in-depth* financial report and budget, to commence with this meeting. This has not been done despite the intent of this House that it should be so; and

WHEREAS, The Kansas Medical Society thinks it is not advisable to condone the commitment of its membership to *complete* service benefits programs for any insurance company which it does not completely control; and

WHEREAS, Kansas Blue Shield has already demonstrated that it will not accept direction from the Kansas Medical Society; therefore, be it

*Resolved*, That the Kansas Medical Society withdraw its support from Kansas Blue Shield by notification in writing; and, be it further

*Resolved*, That the Kansas Medical Society's relationship with Kansas Blue Shield be on the same basis as with any other reputable commercial health insurance carrier; and, be it further

*Resolved*, That the Kansas Medical Society membership has no obligation to continue as participating members of Kansas Blue Shield; and, be it further

*Resolved*, That those members who wish to continue to participate with Kansas Blue Shield understand that this is a personal contract between Kansas Blue Shield and himself; and, be it further

*Resolved*, That the Kansas Medical Society encourages its membership to give all reputable health insurance companies in the state of Kansas the same support in continuing health care under the free enterprise system we all believe in.

## RESOLUTION 71-47

### Kansas Title XIX Program

WHEREAS, The Kansas Medical Society believes that no Kansan who is unable to pay should be denied accessibility to needed medical care; and

WHEREAS, Through the enactment of the Medicaid Program in 1967 by the Kansas Legislature, the state of Kansas assumed the responsibility of payment for medical services for those citizens in the welfare categories as outlined in the State plan; and

WHEREAS, The physicians of Kansas have cooperated by providing professional services and continually monitoring and evaluating utilization of medical services rendered in order to eliminate unnecessary costs; and

WHEREAS, Payment for physicians' services under Title XIX were frozen as of December 31, 1968, and subsequently reduced to the 75th percentile (approximating 1966 fee schedule); and

WHEREAS, Despite these efforts, in fiscal 1971, there has been an increase from 80,000 to 120,000 eligible recipients (33⅓%), resulting in an increased demand for services and hospitalization, with the total cost of the program being greater than the amount appropriated; and

WHEREAS, It is projected that the caseload in fiscal 1972 will continue to increase; and

WHEREAS, The appropriations for fiscal 1972 have been reduced by approximately 10 to 12 million dollars; and

WHEREAS, The Budget Director, the Governor, and the Legislature of the state of Kansas have repeatedly failed to submit an adequate budget to fund the full range of benefits included in the State's Title XIX Program; and

WHEREAS, The State Legislature has repeatedly failed to fund the program originally enacted to pay for the health care services provided for and promised to all categories of welfare recipients; and

WHEREAS, The Kansas Medical Society opposes proration of any provider services; and

WHEREAS, The Department of Social Welfare has been unwilling to provide only those benefits which are necessary and within limits of available funds; therefore, be it

*Resolved*, That the Kansas Medical Society strongly urge the Governor, the Legislature, and the Department of Social Welfare, to develop, with the assistance and cooperation of the Advisory Committee to Welfare of the Kansas Medical Society, a plan of health care for the needy which would limit the scope of services to the five (5) basic services required by federal law and appropriate the necessary money to adequately fund such a program; and, be it further

*Resolved*, That the Kansas Medical Society will continue to endorse and support the Kansas Title XIX Program only if the proposed changes are carried out.

### RESOLUTION 71-48

#### Medical Care—Definition

WHEREAS, It seems apparent that recognizing health care as a "human right" implies an obligation to deliver such care; and

WHEREAS, Delivery of adequate care requires not only persons trained and skilled in the art but also willing to perform services; and

WHEREAS, It seems to be more consistent with human nature to recognize health care as a vital human need rather than a "right"; therefore, be it

*Resolved*, That the Kansas Medical Society go on record as denying health care as a "right" but upholding the concept that adequate health care is a human need, and, furthermore, that this Society and its individual members pledge their continued efforts that no one who needs medical care suffer from lack of it because of inability to pay professional fees; and, be it further

*Resolved*, That the American Medical Association adopt this same concept and that the Congress of the United States be made aware of the fallacy in accepting the concept of medical care as a "human right" and define medical care as it should be—a "human need"; and, be it further

*Resolved*, That this resolution be given widest possible distribution, including, but not limited to:

- All Kansas news media
- The Kansas Legislature
- U. S. Senators and Representatives from Kansas
- The AMA House of Delegates; and, be it further

*Resolved*, That this resolution be introduced to the American Medical Association House of Delegates by the Kansas delegation and that the AMA be urged to adopt an expression of this concept.

### RESOLUTION 71-49

#### KMS Membership

Not adopted.

### RESOLUTION 71-50

#### AMA Resolutions

WHEREAS, Increasing numbers of physicians are questioning the present elective and organizational structure of the AMA as being the representative voice of American medicine; and

WHEREAS, Election of delegates to the AMA is the only established means whereby the views of all physicians may be heard and considered at the national level; and

WHEREAS, The amount of preconvention materials (resolutions, policy statements) is too large to be read and considered by most physicians because of insufficient time; and

WHEREAS, Preconvention materials are distributed primarily to the state society offices and AMA delegates; therefore, be it

*Resolved*, That the Kansas Medical Society support in principle a pilot project whereby the KU Medical Student Society, working in close association with the state office, shall assume the task of both informing and polling the physicians of Kansas concerning proposed legislation to be considered during the annual AMA convention. Furthermore, if the pilot project as outlined below meets with the approval of Kansas physicians, a designated committee of the Kansas Medical Society may wish to administer such an activity in the future.

#### RESPONSIBILITIES

With the assistance of the state office, the KU Medical Student Society shall:

1. Carefully study all proposed resolutions and other pertinent information to be considered by the AMA House of Delegates at the annual convention.
2. Identify those statements or resolutions which would most likely be of interest to the physicians in Kansas.
3. Distribute such information to every physician who is a member of the Kansas Medical Society, including a brief questionnaire for opinion response by the physician.
4. Forward information obtained from the questionnaires to the Kansas delegation to the AMA prior to the convention such that votes cast in the annual assembly may better represent constituency opinion.

### RESOLUTION 71-51

*(Referred to the Advisory Committee to Welfare.)*

#### Inter-Agency Commission on Welfare

WHEREAS, Welfare patients are finding increasing difficulty in obtaining medical services; and

WHEREAS, Physicians often must wait six months to one year for payment of services because of a slow and cumbersome bureaucracy; and

WHEREAS, Physicians in the past have been greatly affected by the inadequate funding of the welfare program through proration of fee scales; and



WHEREAS, Decreasing state expenditures in the future for various welfare programs seems imminent; therefore, be it

*Resolved*, That an inter-agency commission be established, comprised of the director of the State Department of Social Welfare, chairman of the State Public Health and Welfare Committee, two (2) welfare recipients, one (1) representative from the Kansas Medical Society and one (1) student—either medical or from the school of social work.

#### DUTIES

1. This commission shall become thoroughly educated to the problems faced by all parties involved (physicians, consumer, state welfare office, legislature).

2. This commission shall draft specific legislation for the 1972 legislative session aimed at solving the problems of availability of service, delayed payment, insufficient funds.

3. This commission shall begin its duties on June 1 with completion of above outlined responsibilities by December 31, 1971.

4. This commission shall not meet less than twice per month and may meet more often if necessary.

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### RESOLUTION 71-52

#### JOURNAL Distribution

WHEREAS, There exists a component society at the University of Kansas School of Medicine with membership open to any medical student; and

WHEREAS, Persons residing within the boundaries of other component societies of the Kansas Medical Society do not receive the JOURNAL OF THE KANSAS MEDICAL SOCIETY except by subscription or by membership in the Society; and

WHEREAS, The number of physicians remaining in Kansas upon graduation from the University of Kansas School of Medicine has not increased appreciably since the JOURNAL has been distributed free of charge to all medical students; therefore, be it

*Resolved*, That only those students who are members of the Medical Student Component Society at the University of Kansas School of Medicine receive the JOURNAL OF THE KANSAS MEDICAL SOCIETY without cost.

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### RESOLUTION 71-53

#### MECO Program

WHEREAS, Students feel that an introduction within the first two years of medical school training to

specific communities with the express purpose of examining a particular community's medical problems and solutions is of benefit toward the goal of retaining students to that particular sized community; and

WHEREAS, The Student American Medical Association currently has a viable program called the Medical Education and Community Orientation (MECO) program designed to provide the above experience for those interested medical students; and

WHEREAS, SAMA has indicated a desire to start the MECO program in Kansas and has appointed a student director for this purpose; therefore, be it

*Resolved*, That the Kansas Medical Society formally endorse and possibly support this program and urge all members to cooperate fully if called upon by the student director.

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### RESOLUTION 71-54

#### Election of AMA Delegates

WHEREAS, Many physicians believe that they do not have effective input into the policy determining activities of the American Medical Association; therefore, be it

*Resolved*, That the nominating committee shall nominate at least two candidates each for the position of delegate and alternate delegate to the AMA. These candidates shall be elected by the usual secret ballot vote of the House of Delegates.

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### RESOLUTION 71-55

#### Proration Under Title XIX

Not adopted.

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### RESOLUTION 71-56

#### Drug Abuse

WHEREAS, The drug abuse problem represents a national, state and local medical-social issue of major proportions; and

WHEREAS, The medical profession and the pharmaceutical profession have inadvertently, at times, contributed to the problem; and

WHEREAS, The medical and pharmaceutical professions should exercise leadership in attacking the problem in every possible manner; therefore, be it

*Resolved*, That the members of the medical profession and pharmaceutical profession are urged to voluntarily constrain the prescription and dispensing of narcotics, sedatives, hypnotics, tranquilizers, and the stimulant category of drugs; and, be it further

*Resolved*, That the two professions be urged to voluntarily constrain the sale and use of over-the-counter drugs with the potential for abuse; and, be it further

*Resolved*, That the members of the two professions vigorously support and participate in educational activities designed to enlighten society about the hazards of drug abuse.

## RESOLUTION 71-57

### Leave-of-Absence Memberships

WHEREAS, Component medical societies are encouraged to grant a leave of absence to physicians who withdraw from their active practice for an extended period of time either through prolonged illness, for residency training or missionary work; and

WHEREAS, The majority of such members return to active practice in Kansas; and

WHEREAS, This designation permits the physician to retain his membership in his component society, the Kansas Medical Society and in the American Medical Association without the necessity of paying dues; and

WHEREAS, Insurance programs sponsored by the Kansas Medical Society are cancelling coverage of members on leave of absence because of language in the By-Laws; therefore, be it

*Resolved*, That the By-Laws be amended in Section 1.7, page 13, by deletion of the final sentence in that paragraph.

## RESOLUTION 71-58

*(Referred to the Advisory Committee on Welfare for implementation.)*

### Welfare

WHEREAS, Legislative failure to fund the Title XIX program in accordance with the increased caseload has resulted in exhaustion of funds for the remainder of fiscal year 1971; and

WHEREAS, In a meeting with Welfare on May 5, 1971, they announced three alternatives were available to them, the first being immediate proration. The second, making no payments for the remainder of the year; and

WHEREAS, They expressed preference for the third alternative on which the final decision will be reached after the middle of May, which is to honor the first pay period in May and to withhold payment for the second May pay period and both pay periods in June and to pay those claims in July, after July 1, from the fiscal 1972 appropriation; and

WHEREAS, Welfare expressed the hope that the Board would continue to pay in full during fiscal 1972 until the legislature is again in session and that further decisions regarding proration will depend upon subsequent legislative action; and

WHEREAS, If the third alternative is adopted by the Board of Social Welfare; therefore, be it

*Resolved*, That the Kansas Medical Society encourage its members to use all possible care in conserving cost through voluntary restrictions on the care rendered to welfare recipients by implementing such of the following voluntary controls and others as may be determined by this House of Delegates.

1. That prior approval be obtained from the Hospital Utilization Committee before any non-emergency hospital admission for welfare patients be made.

2. That wherever possible laboratory and x-ray examinations be completed prior to hospitalization and that each hospital staff be urged to modify hospital policy for welfare recipients only whereby the hospital will accept the results of such tests.

3. That the hospital be encouraged to notify the county welfare office at the earliest time that the patient's transfer or dismissal date can be anticipated.

4. That utilization review committees exert exceptional care regarding welfare recipients toward the end that all possible hospital stays can be conserved without endangering the patient's health.

5. That physicians voluntarily perform fewer routine examinations on welfare patients.

6. That physicians voluntarily refrain from giving the patient any material by way of injection which can be given by mouth.

7. That no vitamins or appetite depressants be prescribed for welfare recipients.

8. That prescription refills be carefully controlled.

9. That this Society work with the Kansas Pharmaceutical Association upon a formulary which emphasized quality as well as cost control similar to the formulary in use at the University of Kansas Medical Center.

10. That oral contraceptives be obtained through the local family planning agency, if such is available.

11. That one visit only per month be authorized to persons in a nursing home except where required by a change in the patient's condition.

12. That the service of a second physician for care involving a single diagnosis be paid only on referral by the primary physician.

13. That the Fiscal Intermediary be encouraged to provide information which will match the physician, the pharmacist and the patient with the prescription so that more effective utilization of drugs can be accomplished.

14. That refractions for eyeglasses be authorized



at intervals of not less than two years except with prior authorization.

15. That heat treated lenses for eyeglasses be prescribed on professional judgment.

16. That eyeglass frames be limited to \$5.00 and that cases not be paid for.

17. That Welfare be encouraged to continually educate recipients to assist in controlling unnecessary utilization.

18. That Welfare be encouraged to advise recipients to identify their status when making an appointment.

19. That Welfare be requested to invoke a regulation that patients will not be cared for except in cases of emergency unless they present their identification card.

#### RESOLUTION 71-59

##### **Blue Shield Reimbursement Policy for Services of Nonparticipating Physicians**

##### **Board of Directors of Blue Shield**

Not adopted.

#### RESOLUTION 71-60

##### **Health Care for All of Kansas**

WHEREAS, There is an acknowledged shortage of physicians and paramedical personnel in Kansas, be it

*Resolved*, That the Kansas Medical Society participate and cooperate with the Legislature and other concerned parties in a study of medical manpower and paramedical personnel needs in the state of Kansas; and, be it further

*Resolved*, That the Kansas Legislature be urged to carefully outline the extent of professional liability for medical and paramedical personnel.

#### RESOLUTION 71-61

*(It was recommended that this resolution be submitted to Congressman William R. Roy for his analysis and advice, and for his legal and legislative opinion.)*

##### **Collective Bargaining**

WHEREAS, The socio-economic factors today have been (and will moreso be) pressures into the professional practice of medicine; and

WHEREAS, Most segments of society have the privilege of collectively bargaining their communications to benefit all concerned; therefore, be it

*Resolved*, That the Kansas Medical Society and the American Medical Association diligently and expe-

ditiously take all steps necessary to assure that two or more physicians may collectively bargain with a third party in the care of patients without the possibility of prosecution for conspiracy under the Sherman Anti-Trust Act.

#### RESOLUTION 71-62

*(This resolution was tabled.)*

##### **Study of Blue Shield Administration**

*Resolved*, That the House of Delegates of the Kansas Medical Society advise the member-physicians on the Blue Shield Board to conduct an in-depth study of the position, tenure and power of Mr. Sam Barham.

#### RESOLUTION 71-63

##### **Shawnee County Medical Society**

WHEREAS, The Shawnee County Medical Society has done an outstanding job of planning for this, the 112th annual session of the Kansas Medical Society, promoting the efficient conduct of business and the good fellowship of a fine social program; and

WHEREAS, We are all deeply indebted to them for the many hours of planning and working that they have put in; therefore, be it

*Resolved*, That the Shawnee County Medical Society be extended the heartfelt thanks of this entire assembly.

### *113th Annual Session*

### **Kansas Medical Society**

**May 7-10, 1972**

**Salina - Hilton Inn**

**Salina, Kansas**

# Council Meeting

## *Report of Meeting, May 12, 1971*

The Council was called into session at 2:45 p.m. upon the conclusion of the House of Delegates on Wednesday, May 12, 1971, at the Downtown Topeka Ramada Inn. Dr. William J. Reals, newly installed president, called the Council to order. Present were: Dr. Reals, president; Drs. R. R. Beach, J. N. Blank, T. P. Butcher, E. G. Campbell, C. C. Conard, H. F. Coulter, G. W. Fields, V. W. Filley, R. M. Glover, K. L. Graham, C. C. Gunter, D. C. Hadley, H. W. Hiesterman, J. D. Huff, M. R. Knapp, D. A. Leitch, C. M. Lessenden, Jr., W. E. McAllaster, S. C. McCrae, L. F. McKee, R. R. Melton, W. E. Meyer, J. C. Mitchell, G. L. Mowry, L. R. Plye, W. G. Rinehart, E. T. Siler, T. F. Taylor, W. O. Wallace, and E. D. Yoder. Also present were Mr. Swede Swenson and Mr. Oliver E. Ebel.

The president stated the purpose of the meeting was to act upon a few items required by the By-Laws and to consider new resolutions passed by the House which might require immediate action.

Dr. K. L. Graham, chairman of the Committee to Review Relative Value Studies, announced that the work of his committee was virtually complete, and requested authorization from the Council to proceed with the printing of the new Relative Value Schedule. This was approved.

Dr. Reals announced that a letter had been received from the Internal Revenue Service, declaring the Society was again granted its tax exempt status.

It was reported that a letter had been received from Dr. John Cornely, the last remaining member of the Osborne Component Society, requesting revocation of the charter. The Council postponed action on this request until such time as Osborne County can be united with another component society.

There was a discussion of recent action by the House of Delegates which now makes membership in the American Medical Association voluntary. The Council recalled this was not retroactive and that

members who did not pay their 1970 and 1971 AMA dues would be dropped from membership in the Kansas Medical Society and in their component medical society.

The Council endorsed the re-election of Dr. John A. Segerson, Topeka, to serve a three-year term on the Editorial Board. Dr. David A. Gray, Topeka, was unanimously re-elected editor of the JOURNAL for the coming year.

The Council recalled that action taken by the House of Delegates required the Council to select three members of the Kansas Medical Society who with the two immediate past presidents would be the Nominating Committee. The motion was made to defer this subject to the September meeting of the Council. This motion carried and the Nominating Committee will be selected at the Council meeting in the fall.

A written request from the Woman's Auxiliary to the Kansas Medical Society, asking whether the Society would support publication of six issues of the *Auxiliary News* instead of four was granted.

Several items were deferred for discussion at the fall Council meeting:

1. Consideration of the establishment of semiannual meetings of the House of Delegates, one to be held at the time of the annual session and the other prior to the AMA mid-winter meeting.

2. The implementation of Resolution 71-24, relating to a committee on legislation. It was suggested that the Executive Committee explore the possibility of a continuing committee on legislation and present its recommendations to the Council.

3. The creation of two new district societies has resulted in the necessity of redistricting of the council districts in which these societies are located. As it is now, the new societies cross over two council districts. This subject will be presented at a later meeting of the Council.

## 1971 MEMBERSHIP DIRECTORY

**The new membership directory will be printed in August. Please check your listing in the 1970 directory. Corrections should be mailed to the executive office of the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612, by July 1, 1971.**



# Medical-Legal Page

## Record Malpractice Award to Blinded and Crippled Boy

The largest malpractice judgment ever entered against a hospital in the Washington, D. C. area was awarded to a boy who entered the hospital for removal of his tonsils and adenoids and left the hospital permanently blind and crippled. A federal trial court jury awarded the boy \$265,000 for pain, suffering, loss of future income, and special educational expenses and awarded his father \$29,777 for medical costs.

The boy was five years old when the operation was performed in February, 1968. While on the operating table he suffered a cardiac arrest, allegedly because he was not receiving the correct amount of oxygen. In the recovery room, a respirator was used to increase oxygen intake, and the boy was wrapped in a cooling blanket to lower his body temperature. According to witnesses, the cooling blanket did not work, and a coil in the respirator became twisted, reducing the amount of oxygen provided. The boy suffered massive convulsions during the night. As a result he had serious brain damage.

The family brought suit against the hospital, the surgeon, and the organization that provided the anesthesiologist to the hospital. The family charged that as a result of improper care both during and after the operation the boy became permanently blind and became crippled in all four limbs.

The surgeon was charged with negligence in operating too soon after the boy had recovered from another illness. The family charged that the anesthesiologist used malfunctioning machinery. They also contended that the organization that employed him was negligent, as he was "incompetent" and was not able to communicate effectively with the other members of the operating team because his English was poor. The family also charged negligence on the part of the hospital in the care of the boy in the intensive care unit.

The surgeon and the anesthesiologist's organiza-

tion settled with the family out of court. The hospital, the surgeon, and the organization then filed counterclaims against each other. Each claimed that the others were responsible for the injuries. These claims, argued with the jury out of the room, were to be decided by the judge.

At the trial, physicians testified that it was impossible to determine whether there would ever be any improvement in the boy's condition. According to testimony, the boy's mind was functioning normally but his body development was that of a 15-month-old child. Because the nerves in his right hand were dead, he would not even be able to learn the Braille method of reading. Teachers at a school for handicapped children testified that he would have been college material if he had not been physically limited.

The jury found that the hospital's negligence was the cause of the boy's blindness and inability to control his limbs. The hospital was ordered to pay \$265,000 in damages to the boy and \$29,777 to the father for medical costs.—*Rose v. Washington Hospital Center*, News Release, Washington, D. C., *Evening Star* (D.C., D.C., Feb. 19, 1971)

## \$500,000 Cardiac Arrest Malpractice Judgment

A \$500,000 verdict was returned by a California jury in a surgical cardiac arrest case. The verdict was against the anesthetist and the hospital. No award was made against the surgeon.

A 13-year-old boy was admitted to a hospital for an inguinal hernia operation. A cardiac arrest occurred during surgery, resulting in cerebral anoxia. The boy suffered permanent brain damage and permanent damage to his motor and sensory nervous systems.

At trial, the patient claimed that he was given excessive preoperative medication. He further claimed that the nurse-anesthetist employed by the hospital improperly oxygenated him during surgery and failed to properly monitor his vital signs.

The surgeon, anesthetist and hospital each claimed that the appropriate medical standards had been observed.—*Higgins v. Oroville Community Hospital* (Cal.Super.Ct., San Francisco Co., Docket No. 560411, 1970)

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# Vox Dox

William J. Reals, M.D., President  
The Kansas Medical Society

Dear Doctor Reals:

I wish to again express my appreciation for the two wonderful things the Society was kind enough to give me at its recent Topeka meeting. I still am having difficulty believing this actually happened!

The handsome plaque, which says more than is deserved, hangs in my office, and will remain there, or in any other offices or places I may have, as long as I am around.

I cannot put into words how I feel about the honorary membership. The Society since 1934 has been to me the greatest of all organizations, and for me to have this honorary membership, in addition to all the deeply cherished associations and acquaintances

the organization has made possible for me, is just more than I can possibly describe. Then, too, there is no greater honor enjoyed by any person than to be extended honorary membership in a professional organization to which he is not otherwise eligible to join, and in my feelings this is particularly so when that organization is the medical profession.

I also wish to say again that I thank all of you with all my heart for your generosity in giving me these two incomparable presentations.

I would be very grateful if the other Officers, the Councilors, the other members of the House of Delegates, and the other members of the Society can know how much the night of May 11, 1971, means to me.

Sincerely yours,  
CLARENCE G. MUNNS

KANSAS STATE DEPARTMENT OF HEALTH  
TOPEKA, KANSAS

Epidemiology & Disease Control Services—Registration & Health Statistics Services—Kansas Morbidity Incidence  
Summary of Cases Reported in March, 1971 and 1970

<i>Diseases</i>	<i>March</i>			<i>January-March Inclusive</i>		
	1971	1970	<i>5-Year Median 1967-1971</i>	1971	1970	<i>5-Year Median 1967-1971</i>
Amebiasis .....	1	—	—	3	4	3
Aseptic meningitis .....	—	1	—	—	2	—
Brucellosis .....	—	—	—	1	—	—
Diphtheria .....	—	—	—	—	—	—
Encephalitis, prim., infect. ....	1	2	1	2	2	2
Encephalitis, post-infect. ....	—	—	—	—	—	—
Gonorrhea .....	593	547	387	1,620	1,536	1,136
Hepatitis, infectious .....	53	58	35	170	130	91
Measles (Rubeola) .....	488	1	*	533	40	*
Meningococcal meningitis .....	5	—	—	16	—	11
Mumps .....	5	28	*	96	48	*
Pertussis .....	—	—	—	—	—	—
Poliomyelitis .....	—	—	—	—	—	—
Rheumatic fever .....	—	1	—	1	1	1
Rubella (German Measles) .....	93	6	*	154	14	*
Salmonellosis .....	22	20	20	60	35	47
Scarlet fever .....	6	5	6	24	59	24
Shigellosis .....	206	6	6	383	15	15
Streptococcal infections .....	248	366	392	469	658	1,013
Syphilis .....	134	140	134	334	350	334
Tinea capitis .....	3	1	4	10	10	11
Tuberculosis .....	13	22	22	34	51	51
Tularemia .....	—	—	—	—	—	—
Typhoid fever .....	—	—	—	—	—	—

\* Statistics not available for 5-year median.



# Woman's Auxiliary

What can you say about a convention that's over . . . that the host city was great, the hosts and hostesses gracious, the program wonderful, the business meetings successful and that when you got home you were so darn far behind in everything that you wished you could have just stayed at convention forever?

Maybe it isn't exactly like that, but your correspondent Annie (that's me!) sort of had a bit of catching up to do, and she wouldn't be surprised if all you medical men had similar situations when you got home. Of course, *you* probably didn't have to take the dog to the veterinarian immediately for an ear taping. Your wife probably takes care of things like that for you if you don't do it yourself. (Why is it that vets can tape up a dog's ears so that they will stay, but their medical counterparts can't seem to do this?). And you probably had someone else answering the phone to give the local newspapers all the details of that four-day wonderful time. Maybe your doorbell didn't ring ten times while you were going through your mail, but I'll bet your phone did. However, I sort of doubt if you had to correct your daughter's English theme immediately before the class met, placate an anxious partner looking for the "absolutely right" article on elbow synovia, or finish a pantsuit for the same daughter that she simply had to have that afternoon, all the while doing a week's wash. . . .

This is the sort of thing that always happens to Annie when she comes home, whether it is from convention or any other trip out of town. 'Course it makes her feel important and needed and the experts say that that is a modern psychological lack for women because of all the machines that have slipped in and taken her place in the household. So I'm not complaining . . . just bragging a little.

To get to the convention . . . it sure was great. Nobody minded the off and on rain, or the fact that tornado warnings kept the Singing Doctors grounded and they couldn't come. Well, we didn't mind the rain, anyhow. We were all disappointed in not seeing the Singing Swinging Sawbones. We managed to take it in stride, however, even if we did give Swede Swenson a bad time about it. But that is just because we love to give Swede a bad time about anything. He's our whipping boy, more or less, but we love him. He keeps the rest of us from having ulcers and migraine and things like that.

The Auxiliary events went off first rate. All the ladies were feted and festive. Old friends greeted old friends and met new ones. To get serious, we did get a lot of business done too, especially in changing

some of the structure of our state Fall meetings. We have (temporarily, at least, to see if it doesn't work better) voted to abolish the councilor and district meeting system because it wasn't working out too well for the Auxiliary. In its place we have divided the state into five regions, being careful not to split any of the counties that are organized into a single auxiliary. We will have our state Fall board meeting as usual, but instead of having a Fall conference and workshop for state officers, and chairmen and the county officers, we will substitute one-day workshops in each of the five regions. *All the members of the auxiliaries of that region will be invited to this.* If anyone from one of the other regions has had to miss their workshop for some reason, they will be free to attend one of the others to catch up on the news.

At any rate, we think that this system will get the materials to the county presidents, chairmen and members much faster than before. We also think they will become more interested and involved when they become better acquainted with the work of the Auxiliary.

So, we haven't abolished the system completely. In fact, the councilors presently appointed will continue to serve out their terms, working along with the state membership chairman in setting up the workshops. A membership chairman will be appointed for each of the regions, and councilors whose terms aren't up will serve in this capacity in their areas. The only difference is in the title of membership chairman.

So, you don't have to worry about us not having proper supervision . . . we will still have a "boss" in each of the regions to keep us in line. In addition, these regions will have representation on the nominating committee so that every area of the state will have an opportunity to run someone for office if they wish. We think it is more democratic that way, even if it did take all year to re-do the by-laws and two days to satisfactorily explain it to everyone at convention!

Speaking of nominations, your new Auxiliary state officers for 1971-72 are as follows: Mrs. Donald R. Pierce, Topeka, president; Mrs. John B. Jarrott, Hutchinson, president-elect; Mrs. Lucien R. Pyle, Topeka, first vice-president; Mrs. Phillip Godwin, Lawrence, second vice-president; Mrs. Jack E. Randle, Bucklin, recording secretary; and Mrs. Philip Hostetter, Manhattan, treasurer.

We are sure they will do a good job for you and for the Auxiliary. We welcome them, along with your new officers, to the new Medical Society and Auxiliary year.

Take care, now, during the summer. Hope you don't fall off the boardwalk at Atlantic City. Don't work too hard, but take a few days off to play. Remember the words of the wise old philosopher who said . . . " 'Twasn't the cough that carried 'er off, 'twas the coffin they carried 'er off'n."

Conventionally yours,

Auxiliary Annie

## KMS Education-Information Report

April 15-May 15

During this 30-day period, Parkinson and Associates prepared the following releases which were distributed to the state's weekly and daily papers and the 113 radio and television stations:

1. Two pre-convention releases detailing various activities of the 112th annual meeting.
2. A 1,000-word feature concerning the relationship of growing malpractice suits and the shortage of physicians in certain areas.

Release usage continues at a high level, judging from the clippings provided by the Kansas Press Service, and publicity continues to be a key role in the education-information program.

The third group of fillers was mailed to the weekly and daily papers in the state during this period. These fillers were based on various health tips and information used in previous releases.

Kalen Larson, of the agency's copy department, provided on-the-scene coverage of the convention. She maintained liaison with the Topeka area media and the two wire services, and arranged news conferences during the convention for Dr. John M. Kenney, Dr. Russell P. Roth, Senator Paul J. Fannin, and the outgoing and incoming Society presidents.

The various information-education contacts were also alerted to the possibility that three recently distributed books could have negative public impact on the medical profession. Members may be interested in reading these books, because it is likely that friends and patients will be asking about them:

*In Failing Health, The Quality of Mercy and The Gerber Report.*

As was the case during Dr. Collins' term, weekly meetings have been established with Dr. Reals and Oliver Ebel. They are scheduled for each Wednesday in Wichita.

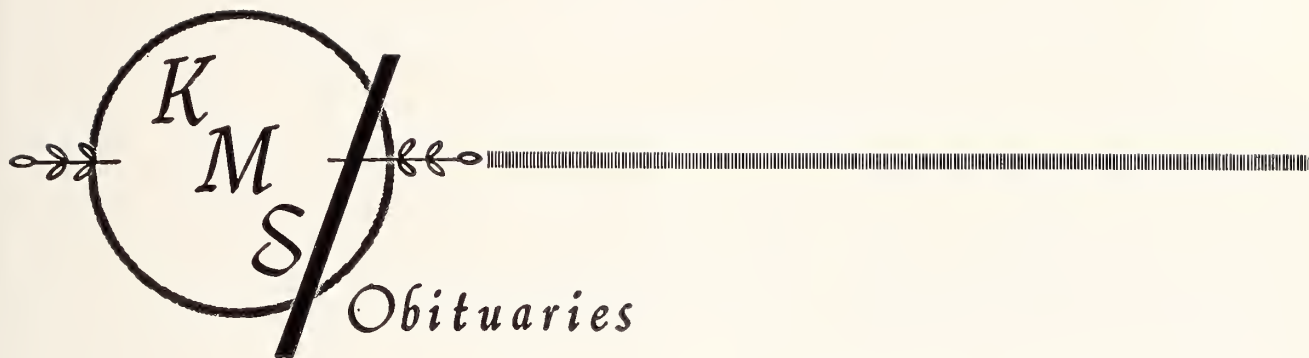
## Along the Bookshelf

### Clendening Medical Library

#### RECENT ACQUISITIONS

- Blos, Peter. The young adolescent; clinical studies. New York, Free Press, 1970.
- Coe, Rodney M. Planned change in the hospital; case studies of organizational innovations. New York, Praeger Publishers, 1970.
- Corscaden, James Albert. Gynecologic cancer. Williams and Wilkins, 1970.
- Edge, John R. Lectures in chest medicine. New York, American Elsevier Co., 1970.
- International Congress on Group Medicine, 1st, Winnipeg, 1970. New horizons in health care; proceedings. Winnipeg, 1970.
- Kaufman, Sherwin A. New hope for the childless couple; the causes and treatment of infertility. New York, Simon and Schuster, 1970.
- Kessler, Henry Howard. Disability-determination and evaluation. Philadelphia, Lea & Febiger, 1970.
- Lewis, Howard R. The medical offenders. New York, Simon and Schuster, 1970.
- Lillywhite, Herold S. Pediatrician's handbook of communication disorders. Philadelphia, Lea & Febiger, 1970.
- McNichol, Ronald W. The treatment of delirium tremens and related states. Springfield, Illinois, Thomas, 1970.
- Maddin, William Stuart. Current dermatologic management. St. Louis, Mosby, 1970.
- Mann, Kenneth W. Deadline for survival; a survey of moral issues in science and medicine. New York, Seabury Press, 1970.
- Noonan, John T. The morality of abortion; legal and historical perspectives. Cambridge, Massachusetts, Harvard University Press, 1970.
- Palmore, Erdman. Normal aging; reports from the Duke longitudinal study, 1955-1969. Durham, North Carolina, Duke University Press, 1970.
- Routh, Thomas A. Choosing a nursing home; the problems and their solutions. Springfield, Illinois, Thomas, 1970.
- Sagall, Elliot Laurence. The law and clinical medicine. Philadelphia, Lippincott, 1970.
- Shuster, Sam. Systemic effects of skin diseases. New York, Appleton-Century-Crofts, 1970.
- Workshop on Neckache and Backache, Wayne State University, 1969. Neckache and backache. Springfield, Illinois, Thomas, 1970.





#### HOWARD C. CLARK, M.D.

Dr. Howard C. Clark, 65, Wichita obstetrician and gynecologist, died April 17, 1971.

Born in Belpre, Kansas, on May 3, 1905, he moved to Wichita 41 years ago. He was graduated from Northwestern University, Evanston, Illinois, in 1931. He was a past president of the Medical Society of Sedgwick County and authored the book, "The History of the Sedgwick County Medical Society."

Dr. Clark is survived by his wife, two sons and a daughter.

A research fund memorial has been established with St. Francis Hospital, Wichita.

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#### Z. MILES NASON, M.D.

Dr. Miles Nason, Tucson, Arizona, formerly of Kansas City, Kansas, died April 12, 1971, at a hospital in Tucson. He was 65 years old.

Born in Kansas City, Kansas, December 14, 1905, he was a resident there until moving to Arizona three years ago. He was graduated from the University of Kansas School of Medicine in 1932. Dr. Nason was the national co-founder of the first Alcoholics Anonymous Club in the Midwest and memorial contributions may be made to Alcoholics Anonymous, 1925 North 11th Street, Kansas City, Kansas.

Surviving Dr. Nason are his wife, two sons, and a daughter.

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#### ROLLIN R. NEVITT, M.D.

Dr. Rollin R. Nevitt, 70, of Fort Scott died April 27, 1971, at Fort Scott.

Dr. Nevitt was born December 16, 1900, at Linden, Missouri. He was graduated from the Kansas City University School of Pharmacy in 1924, the University of Alabama in 1936 and the Tulane University School of Medicine in 1941. He established his practice in Fort Scott in 1953. He retired five years ago because of ill health.

Dr. Nevitt is survived by a daughter and two brothers.

Memorial contributions may be made to the Kansas Heart Association.

# The Kansas Medical Society—1971-1972

## OFFICERS

President .....	William J. Reals, Wichita
Immediate Past President ....	Francis T. Collins, Topeka
President-Elect .....	Kenneth L. Graham, Leavenworth
First Vice President .....	Thomas F. Taylor, Salina
Second Vice President .....	John N. Blank, Hutchinson
Secretary .....	Emerson D. Yoder, Denton
Treasurer .....	Chester M. Lessenden, Jr., Topeka
A.M.A. Delegate .....	John C. Mitchell, Salina
A.M.A. Delegate .....	Lucien R. Pyle, Topeka
A.M.A. Alternate .....	Thomas P. Butcher, Emporia
A.M.A. Alternate .....	George E. Burket, Jr., Kingman
Chairman of Editorial Board ..	David E. Gray, Topeka

## COUNCILORS

District 1.....	Wayne O. Wallace, Atchison
District 2.....	John D. Huff, Kansas City
District 3.....	Henry F. Coulter, Mission
District 4.....	Wm. G. Rinehart, Pittsburg
District 5.....	Gerald L. Mowry, Manhattan
District 6.....	Richard R. Beach, Topeka
District 7.....	Edward G. Campbell, Emporia
District 8.....	Sigurd S. Daehnke, Winfield
District 9.....	Spencer C. McCrae, Salina
District 10.....	Richard M. Glover, Newton
District 11.....	Warren E. Meyer, Wichita
District 12.....	Vernon W. Filley, Pratt
District 13.....	Eugene T. Siler, Hays
District 14.....	Marvin O. Steffen, Great Bend
District 15.....	Richard H. Hill, Meade
District 16.....	Herman W. Hiesterman, Quinter
District 17.....	Galen W. Fields, Scott City
District 18.....	Delmont C. Hadley, Ottawa

## OFFICERS OF COMPONENT SOCIETIES—1971

<i>Society</i>	<i>President</i>	<i>Secretary</i>
Allen.....	George F. DeTar, Iola.....	Eugene Myers, Iola
Anderson.....	Thomas M. Dougherty, Garnett.....	Claib B. Harris, Garnett
Atchison.....	John T. Gowney, Atchison.....	Frank K. Bosse, Atchison
Barton.....	Homer B. Russell, Great Bend.....	Robert J. Unrein, Great Bend
Bourbon.....	James J. Burke, Fort Scott.....	Michael J. McKenna, Fort Scott
Butler.....	James N. Shields, El Dorado.....	Robert W. Proctor, El Dorado
Central Kansas.....	Jerald L. Starkey, Russell.....	Alfred L. Scherer, Osborne
Cherokee.....	George Belcher, Columbus.....	Richard M. Chubb, Baxter Springs
Clay.....	Carl H. Ruff, Clay Center.....	Dennis Richards, Clay Center
Cloud.....	Claude J. Harwood, Glasco.....	DeWayne D. Hofer, Concordia
Cowley.....	Newton C. Smith, Arkansas City.....	Jay L. Richardson, Arkansas City
Crawford.....	Samuel B. Muller, Pittsburg.....	Wesley H. Hall, Girard
Dickinson.....	Kenneth E. Conklin, Abilene.....	Charles R. Svoboda, Chapman
Douglas.....	J. Alan Sanders, Lawrence.....	David L. Hiebert, Lawrence
Edwards.....	W. Lynn McKim, Kinsley.....	M. Dale Atwood, Kinsley
Flint Hills.....	Gould C. Garcia, Emporia.....	Edward G. Campbell, Emporia
Ford.....	William V. Trekell, Dodge City.....	Richard L. Brownrigg, Dodge City
Franklin.....	David G. Laury, Ottawa.....	Donald E. Philgreen, Ottawa
Geary.....	Charles V. Minnick, Junction City.....	Herbert L. Bunker, Jr., Junction City
Greenwood.....	John H. Basham, Eureka.....	C. Dryden Baird, Eureka
Harvey.....	Ivan H. Carper, Newton.....	Vernon W. Vogt, Newton
Iroquois.....	J. Roderick Bradley, Greensburg.....	W. W. Orrison, Meade
Jackson.....	James C. Seeley, Holton.....	M. Ross Moser, Holton
Jefferson.....	Robert R. Snook, McLouth.....	Francis W. Huston, Winchester
Johnson.....	Eugene W. J. Pearce, Shawnee Mission.....	W. Stewart Hiatt, Shawnee Mission
KU Student Medical.....	Larry McDonald, Kansas City.....	Louis Forster, Kansas City
Labette.....	Ned B. Gorrell, Parsons.....	Guy W. Cramer, Parsons
Leavenworth.....	Donald L. Snow, Lansing.....	Paul D. Johnson, Leavenworth
McPherson.....	William J. Collier, McPherson.....	Arthur H. Dyck, McPherson
Marion.....	Herman F. Janzen, Hillsboro.....	Robert G. Franz, Hillsboro
Miami.....	Robert E. Banks, Paola.....	Jack G. Rowlett, Paola
Mitchell.....	Roger P. Weltmer, Beloit.....	Carl W. Plowman, Jewell
Northeast Kansas.....	Roger D. Warren, Hanover.....	Emerson D. Yoder, Denton
Northwest Kansas.....	F. Merlynn Colip, Norton.....	George D. Marshall, Colby
Osborne.....	John F. Cornely, Osborne.....	John F. Cornely, Osborne
Pawnee.....	Ole R. Cram, Jr., Larned.....	Thomas D. Ewing, Larned
Pottawatomie.....	Orval L. Smith, St. Marys.....	Fred E. Brown, St. Marys
Pratt-Kingman.....	Cyril V. Black, Pratt.....	Robert E. Boyer, Kingman
Reno.....	Wilbur B. Neel, Hutchinson.....	Wallace D. Holderman, Hutchinson
Republic.....	Ernie J. Chaney, Belleville.....	Duane L. Scott, Belleville
Rice.....	Curtis V. Wolf, Lyons.....	P. E. Beauchamp, Sterling
Riley.....	Jack T. Peterson, Manhattan.....	Roger P. Reitz, Manhattan
Salina.....	William E. Mowery, Salina.....	Harold R. Smith, Salina
Sedgwick.....	William C. Swisher, Wichita.....	John J. Schlueter, Wichita
Seward.....	Norvan D. Harris, Liberal.....	Jack D. Reese, Liberal
Shawnee.....	Arthur C. Cherry, Jr., Topeka.....	Ralph H. Baehr, Topeka
Smith.....	Hugh G. Woods, Smith Center.....	Victor E. Watts, Smith Center
South Central Tri-County.....	Ralph E. Bellar, Harper.....	Pedro G. Price, Wellington
Southeast Kansas.....	William K. Walker, Sedan.....	Kenneth L. Knuth, Independence
Southwest Kansas.....	Norman G. Marvin, Syracuse.....	Marion E. Spikes, Garden City
Stafford.....	O. W. Longwood, Stafford.....	C. Everett Brown, Stafford
Washington.....	D. A. Bitzer, Washington.....	L. L. Huntley, Washington
Wyandotte.....	W. David Francisco, Kansas City.....	Louis M. Culp, Kansas City

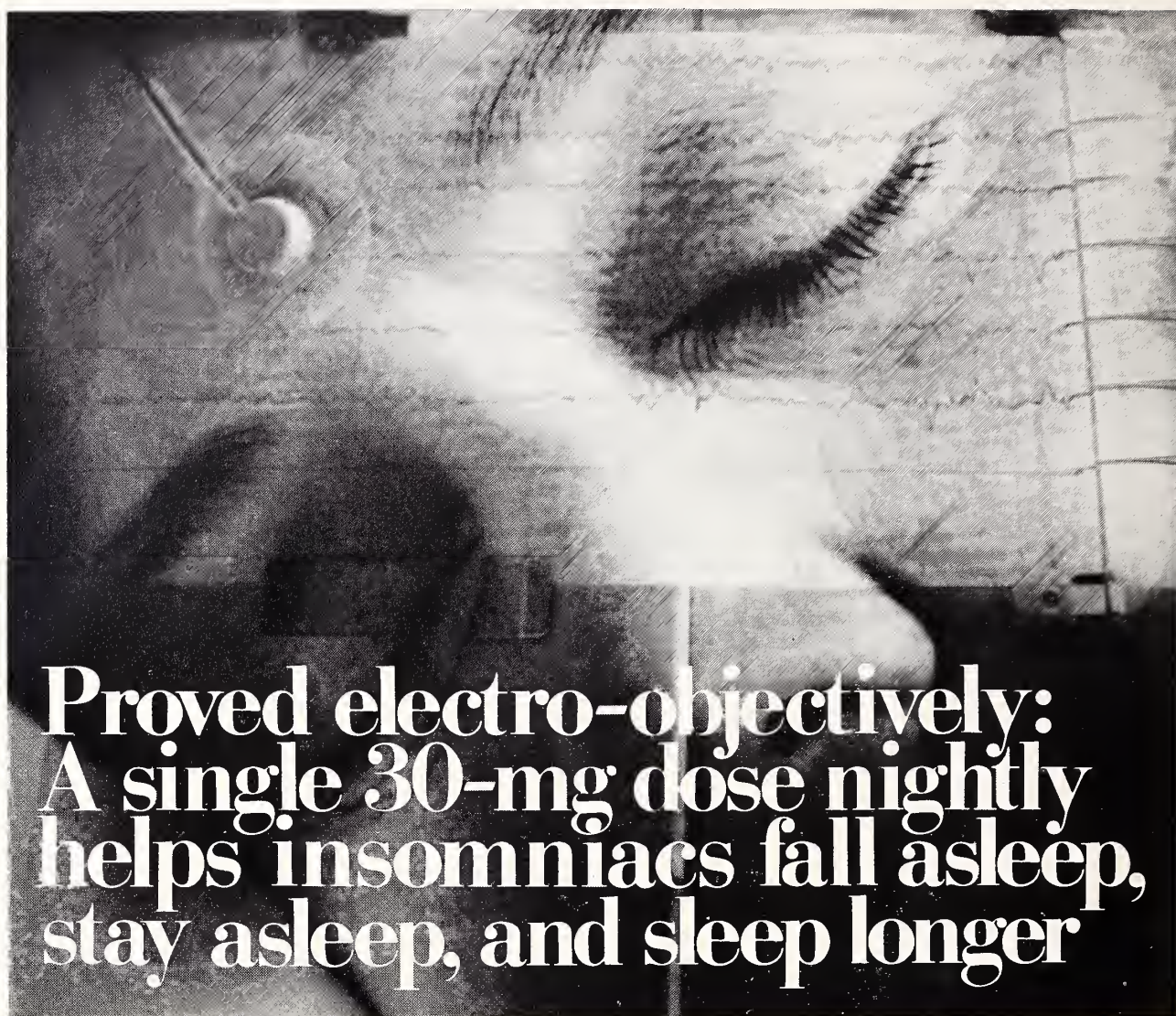




THE  
Journal  
OF THE  
Kansas  
Medical  
Society







# Proved electro-objectively: A single 30-mg dose nightly helps insomniacs fall asleep, stay asleep, and sleep longer

Controlled studies of 23 insomniac and 13 normal subjects treated with Dalmane (flurazepam HCl) in five sleep laboratories generated over 4000 hours of electroencephalographic, electro-oculographic and electromyographic tracings. These studies revealed that Dalmane 30 mg nightly usually induces sleep in 22 minutes and provides seven to eight hours of sleep.<sup>1,2,3</sup>

Moreover, Dalmane 30 mg was found to be useful in all common types of insomnia in which it was studied. Of drugs studied in a sleep laboratory,<sup>1</sup> Dalmane 30 mg was the only one that consistently reduced sleep induction time and maintained sleep nightly for 14 consecutive nights of use.

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## Confirmed clinically

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Fifty-three controlled studies using a paired-night, double-blind crossover design have evaluated Dalmane clinically. In the majority of these, Dalmane (flurazepam HCl) significantly reduced sleep induction time and increased sleep duration. Dalmane and a placebo were alternated on successive nights in 2010 insomniacs, 1706 of whom were studied for a single night-pair, and the remainder for as many as fifteen paired-nights. A patient preference for Dalmane was apparent in the paired-night studies.

Dalmane was also preferred to certain hypnotics in two separate preference studies. In each of two double-blind studies, Dalmane 30 mg retained effectiveness for the total period of seven consecutive treatment nights, according to subjective/objective evaluations.



In summary, Dalmane is useful in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening. It can be used effectively in patients with recurring insomnia or poor sleeping habits, and in acute or chronic medical situations requiring restful sleep.

### Dalmane (flurazepam HCl) is generally well tolerated

In most instances in which adverse effects with Dalmane were reported, they were mild, infrequent and seldom required discontinuation of the drug. Dizziness, drowsiness, lightheadedness and the like were the side effects most frequently noted, particularly in elderly or debilitated patients.<sup>3</sup> Instances of hepatic dysfunction, paradoxical reactions (excitement) and hypotension are rare with Dalmane, and morning hang-over is relatively infrequent. In studies to date the effectiveness of Dalmane for recommended periods of use is maintained without need to increase dosage.

**References:** 1. Kales, A., et al.: "Effectiveness of Sleep Medications: All-Night EEG Studies of Hypnotic Drugs," in Proc. 7th Internat. Cong. Electroencephal. and Clin. Neurophysiol., San Diego, Calif., Sept. 13-19, 1969. 2. Kales, A., et al.: "Psychophysiological and Biochemical Changes Following Use and Withdrawal of Hypnotics," in Kales, A. (ed): *Sleep: Physiology and Pathology*, Phila., Lippincott, 1969, p. 331. 3. Data on file, Medical Department, Hoffmann-La Roche Inc.

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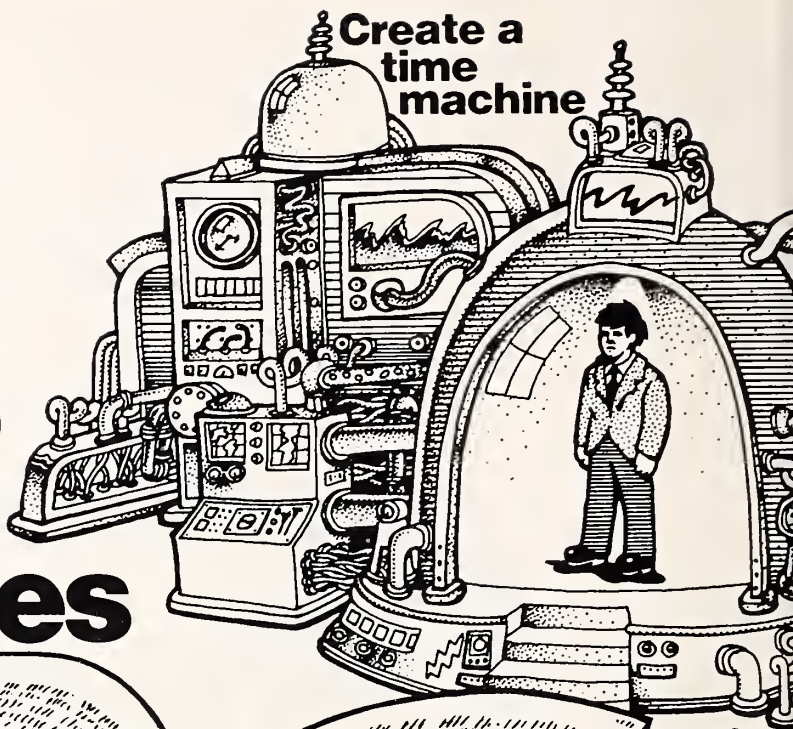
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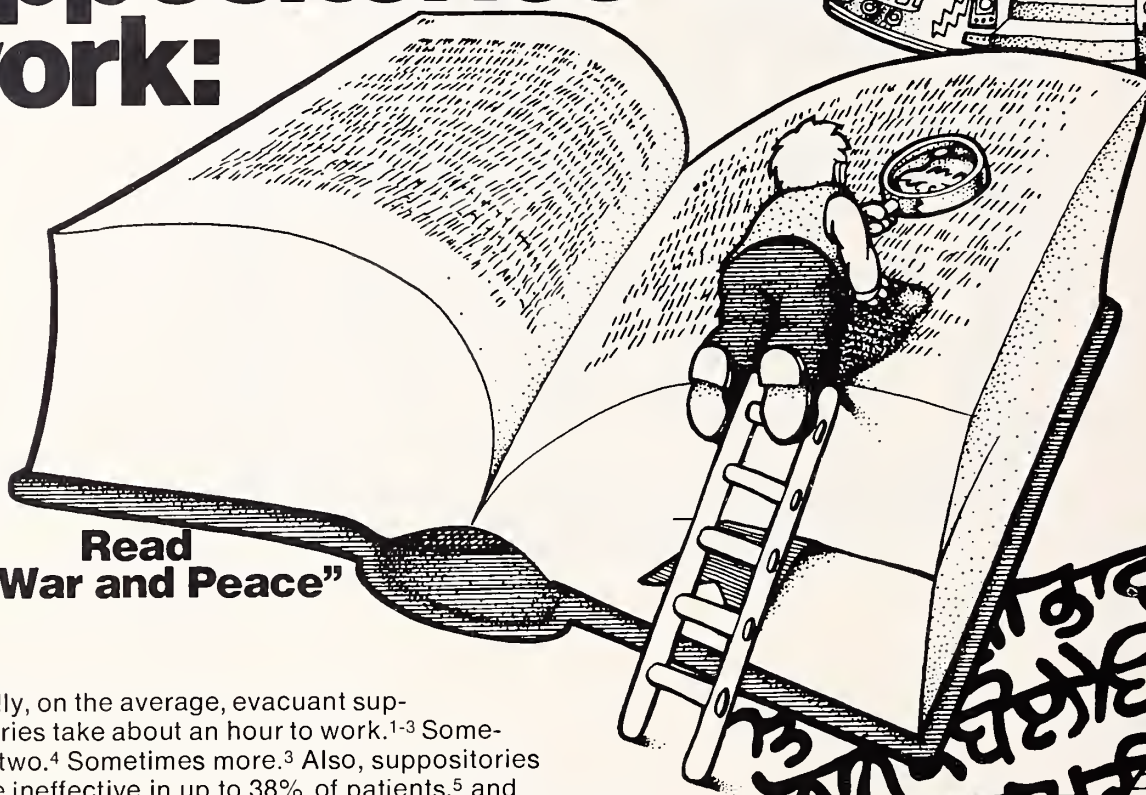


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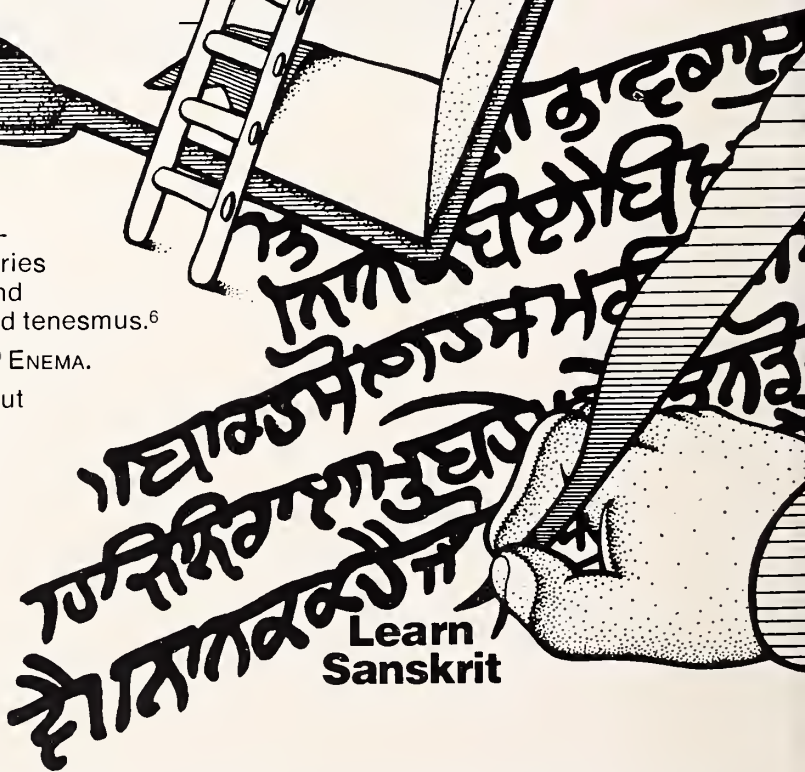
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# Coronary Arteriograms

## *A Study of 100 Patients With Electrocardiographic Correlation*

WAYNE GRAY, M.D., and HUBERT BELL, M.D.,  
*Kansas City, Kansas\**

### Introduction

THE ADVENT OF SAPHENOUS vein by-pass grafts for the treatment of coronary artery disease has prompted the need for the angiographic demonstration of the extent and severity of coronary atherosclerotic lesions.<sup>1, 2</sup> Any patient with angina should be considered a potential candidate for myocardial revascularization. Although a relatively limited amount of experience exists at the present time, it appears that a continuously growing number of patients with coronary artery disease will profit from some form of aggressive surgical management. The appropriate selection of these patients for coronary artery surgery will be done by coronary arteriographic as well as other hemodynamic studies at cardiac catheterization.<sup>3-5</sup>

This paper is a review of the findings of 100 patients evaluated for chest pain at the University of Kansas Medical Center. Each patient had a selective coronary arteriogram, resting electrocardiogram, and Master's two-step postexercise electrocardiogram. The coronary arteriograms were evaluated as to the extent and severity of the lesions. The results of the resting and postexercise electrocardiogram were correlated with the coronary arteriograms.

### Method

One hundred patients undergoing selective coronary angiography for the evaluation of chest pain were stud-

---

The coronary arteriograms were analyzed and compared to the electrocardiograms of 100 patients with chest pain. In 30 patients with normal arteriograms there were seven resting electrocardiograms, and eight postexercise electrocardiograms in 14 patients diagnostic of ischemic heart disease. In 59 patients with severe coronary artery disease, the postexercise electrocardiogram was only 59 per cent accurate in predicting ischemia. Completely normal resting and postexercise electrocardiograms were present in nine (15%) of these patients with severe disease. The overall diagnostic accuracy of the postexercise electrocardiogram was only 64 per cent. The importance of the coronary arteriogram in determining the extent and severity of arteriosclerotic heart disease and in establishing the diagnosis is emphasized.

---

\* From the Cardiovascular Laboratory, University of Kansas Medical Center, Kansas City, Kansas.

Supported in part by NIH grant 5T02 HE05670—22.

TABLE 1

LOCATION OF SEVERE (3+) LESIONS ON THE CORONARY ARTERIOGRAM

Coronary Artery	No. of Patients
Proximal LCA .....	2
RCA .....	11
AD .....	7
CX .....	0
RCA + AD .....	10
RCA + CX .....	4
AD + CX .....	4
RCA + AD + CX .....	21
Total .....	59

Legend

- LCA, Left Coronary Artery
- RCA, Right Coronary Artery
- AD, Anterior Descending Coronary Artery
- CX, Circumflex Coronary Artery

ied. Patients with valvular heart disease or pulmonary hypertension were excluded from this study. A resting electrocardiogram and standard double Master's two-step exercise test were performed on these patients during the hospitalization for the angiographic study.<sup>6</sup> A positive ischemic change in electrocardiogram was greater than or equal to 1 millimeter of flat ST segment depression in the postexercise tracing. Selective coronary arteriograms were performed using the Judkins technique.<sup>7, 8</sup> Sixteen millimeters or 35 millimeters cine and static films were obtained in two planes. The coronary arteriograms were classified according to Demany (1+ representing minimal disease, 2+ equal to 50 per cent obstruction of the major vessel, and 3+ narrowing representing greater than 50 per cent obstruction of a major vessel).<sup>9</sup> Patients with severe disease were categorized as to the location of the 3+ lesion with respect to the major coronary artery involved. Each vessel was graded according to the most severe lesion. Since greater than 50 per cent obstruction of a major vessel is required before significant reduction of coronary blood flow occurs, patients with 1+ or 2+ disease were excluded from this study.<sup>10</sup> Eleven patients had such minimal narrowing and were excluded since the presence or absence of ischemia was equivocal. Myocardial ischemia was assumed to correlate with the appearance of the coronary arteriograms. The accuracy of the postexercise electrocardiogram in predicting severe ischemic heart disease was determined. The resting electrocardiogram was also analyzed for diagnostic evidence of an old or recent myocardial infarction and compared with the results of the coronary arteriograms. Standard electrocardiographic criteria for myocardial infarction were utilized according to Lipman and Massie.<sup>11</sup>

TABLE 2

ECG DIAGNOSIS IN 59 PATIENTS WITH SEVERE (3+) CORONARY ARTERY DISEASE

	No. of Patients	Per Cent
Resting ECG		
Myocardial infarction		
Present .....	31	53
Absent .....	28	47
Postexercise ECG		
Abnormal .....	35	59
Normal .....	24	41
Normal resting ECG and normal postexercise ECG .....	9	15
Non-specific ST changes present resting and postexercise ECG .....	2	4

Results

In the 100 patients studied, the ages ranged from 27 to 68 years and there were 76 men and 24 women. Of these, 59 patients had severe (3+) coronary artery disease. Normal coronary arteriograms were found in 30 patients. The remaining 11 patients had equivocal arteriograms and were excluded.

ARTERIOGRAPHIC FINDINGS

Table 1 shows the location of the major lesions in the 59 patients with severe disease. Out of these, 20 patients (34%) had evidence of single vessel involvement with severe disease. Two major vessels were involved with 3+ disease in 18 (30%) and severe three vessel disease was found in 21 patients (36%).

TABLE 3

ECG DIAGNOSES IN 30 PATIENTS WITH NORMAL CORONARY ARTERIOGRAMS

	Patients
Normal resting ECG .....	12
Abnormal resting ECG .....	18
Old myocardial infarction .....	8
Anterior .....	3
Inferior .....	3
True posterior .....	2
Non-specific ST .....	10
Ischemia and/or digitalis .....	2
LBBB .....	2
Left axis deviation .....	2
Second degree A-V block .....	1
Abnormal Master's two-step .....	8



There was a total of 119 3+ lesions in these 59 patients; 46 were confined to the right coronary artery, 42 were located in the left anterior descending coronary artery, 29 in the left circumflex coronary artery and 2 in the proximal left coronary artery. In addition to the high grade lesions, many of the patients had atherosclerotic lesions in the more distal portions of the same vessel producing less than 50 per cent obstruction but these lesions were not evaluated.

#### CORRELATION WITH THE ELECTROCARDIOGRAM

The overall diagnostic accuracy of the postexercise electrocardiogram was 64 per cent (57/89 correct). In patients with no coronary artery disease, the accuracy of the postexercise electrocardiogram was 73 per cent (22/30 negative). In patients with severe coronary disease, the accuracy of the postexercise electrocardiogram was only 59 per cent (35/59 positives). In the 24 patients with the false negative postexercise electrocardiograms, the location of the 3+ lesion did not account for the discrepancy. Out of the 59 patients with severe disease, 28 patients had resting electrocardiograms that were not diagnostic of a myocardial infarction. Of these 28 patients, 11 had a normal postexercise electrocardiogram (Table 2). In nine patients (15%) with severe disease, the resting and postexercise electrocardiogram were both completely normal.

In the 30 patients with normal coronary arteriograms, 18 patients had abnormal resting tracings. Seven of these ECGs demonstrated evidence of old myocardial infarctions, one showing evidence of both an anterior and inferior myocardial infarction in the same patient. The total number of patients having electrocardiographic evidence of ischemic heart disease with either an old infarction on the resting tracing or positive postexercise electrocardiogram was 14 or 47 per cent (14/30). The results of the diagnoses in this group of patients are presented in Table 3.

The following case examples are given to illustrate the findings in this study:

**CASE EXAMPLE ONE:** The patient was a 44-year-old female with a history of chest pain since 1968, following what was thought to have been a myocardial infarction. The chest pain had been progressively worse since that time and was described as a substernal ache which was consistently precipitated by exercise and relieved by rest. The pain lasted for 20 minutes and occurred approximately three times per day. The patient also complained of a sharp anterior chest pain in addition, which was not angina-like. The physical examination was unremarkable. A two-hour postprandial blood glucose was normal. A lipoprotein electrophoresis was normal. The patient's chest x-ray was normal. The resting electrocardiogram was normal. A Master's two-step was positive. The vectorcardiogram was normal. Both the right and left coronary arteriograms were normal. A left ventricular cine demonstrated normal left ventricular function. The patient's

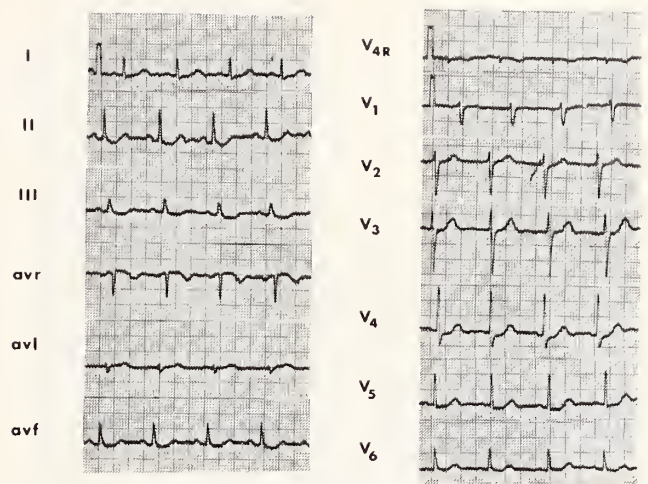


Figure 1. Normal resting ECG (Case 1).

left ventricular end-diastolic pressure was 13. Figures 1 through 7 represent electrocardiograms, vectorcardiogram, and angiograms in this patient.

**CASE EXAMPLE TWO:** The patient was a 50-year-old male with a history of chest pain since 1966. The chest pain was substernal in location, occurred with minimal exertion, radiated down the arms, and was relieved by nitroglycerin. The pain had gradually increased in severity since the onset in 1966. A fourth heart sound was present on physical examination but there were no other abnormal findings. A two-hour postprandial blood glucose was normal, and the serum lipoprotein electrophoresis revealed a Type IV hyperlipoproteinemia. The chest x-ray was unremarkable. The resting electrocardiogram was normal. A Master's two-step was negative. The vectorcardiogram was negative. The coronary arteriograms demonstrated a complete obstruction of the right coronary artery and an 80 to 90

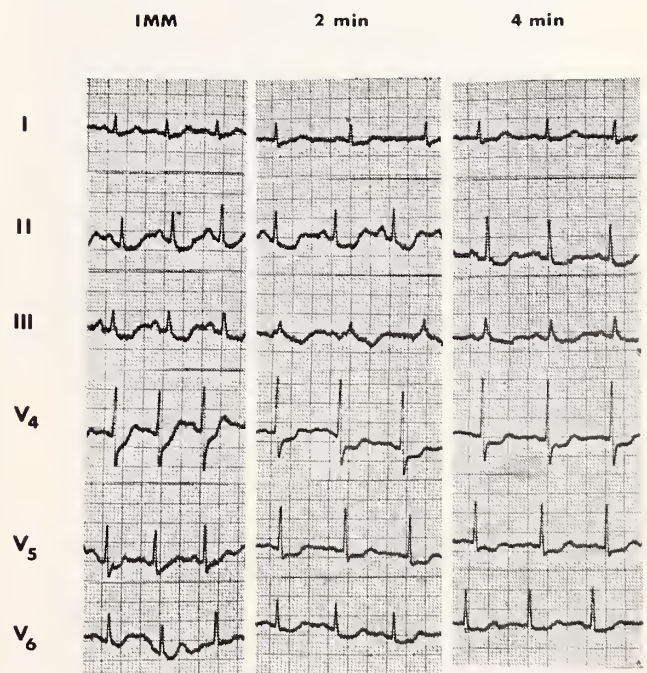


Figure 2. Abnormal Master's two-step (Case 1).

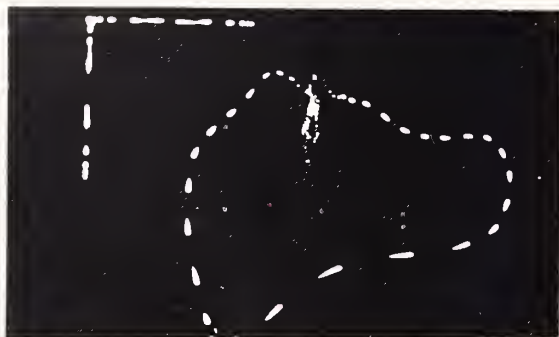


per cent obstruction of the left anterior descending coronary artery. A left ventricular cine revealed satisfactory left ventricular function. The left ventricular end-diastolic pressure was 12. *Figures 8 through 12* represent the electrocardiograms, vectorcardiogram, and the left coronary arteriogram in this patient.

H



S



F



*Figure 3.* Normal vectorcardiogram (Case 1). H = Horizontal, S = Sagittal, F = Frontal planes.

### Discussion

Many of the lesions seen on the coronary arteriograms in these patients were amenable to surgical treatment by saphenous vein by-pass grafts. A significant number of these patients (34%) had evidence of single vessel involvement with severe disease and were ideal



*Figure 4.* Normal left coronary arteriogram (Case 1).

candidates for surgical therapy. In eleven patients the lesion producing severe obstruction was localized to the right coronary artery which is the most accessible vessel at the time of surgery. The large number of isolated high grade right coronary artery lesions (11) correlates well with a previous report by Gensini.<sup>12</sup> The frequency of severe three vessel disease (21) has also been experienced in patients with angina. The fact that the coronary arteriogram is needed to define the extent and severity of the coronary disease is readily accepted. The importance of the arteriogram in actually establishing the diagnosis of arteriosclerotic heart disease is perhaps



*Figure 5.* Normal right coronary arteriogram (Case 1).





Figure 6. Normal left ventriculogram during diastole (Case 1).



Figure 7. Normal left ventriculogram during systole (Case 1).

not so commonly appreciated. The significant incidence of false positive and false negative postexercise electrocardiograms and the unreliability of the resting tracing, emphasizes the inaccuracy of the electrocardiogram in predicting ischemic heart disease, and the importance of the coronary arteriogram as a definitive means of determining the presence of arteriosclerotic heart disease.

The cause of false positive postexercise electrocardiograms in this study is not clear. Hypokalemia, digitalis effect, and J point depression can mimic myocardial ischemia on the electrocardiogram and cause errors in interpretation.<sup>13</sup> Five of the patients with false positive postexercise electrocardiograms were in patients receiving digitalis. None of the patients were hypokalemic.

The resting electrocardiogram can also frequently be misleading as evidenced by the number of abnormal tracings present in the patients with normal coronary arteriograms. Seven of these electrocardiograms actually fulfilled the criteria for an old myocardial infarction. Two of these patients had a cardiomyopathy which can electrocardiographically mimic myocardial infarction.<sup>14</sup> Angina pectoris and myocardial ischemia have been reported in patients with apparently normal coronary arteriograms. It is possible that some of our patients fall in this category.

Angina-like chest pain in patients with normal coro-

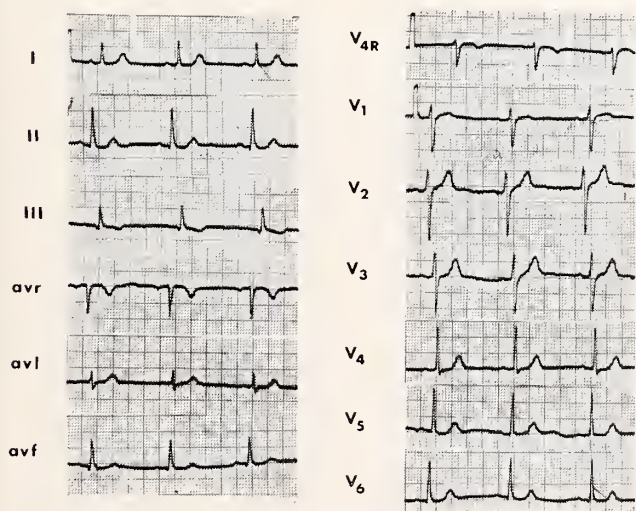


Figure 8. Normal resting ECG (Case 2).

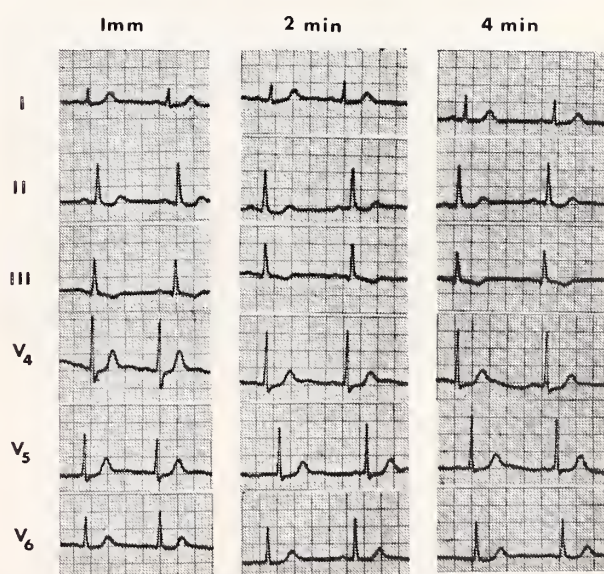
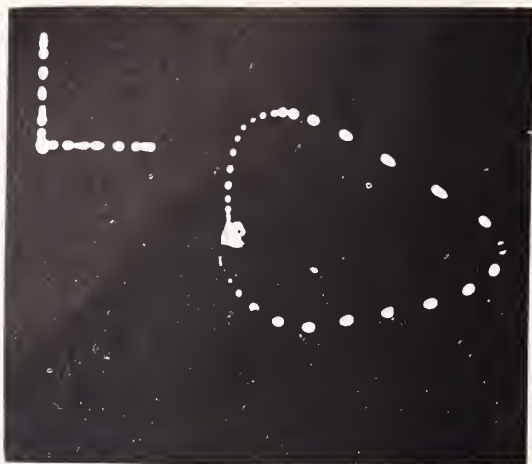
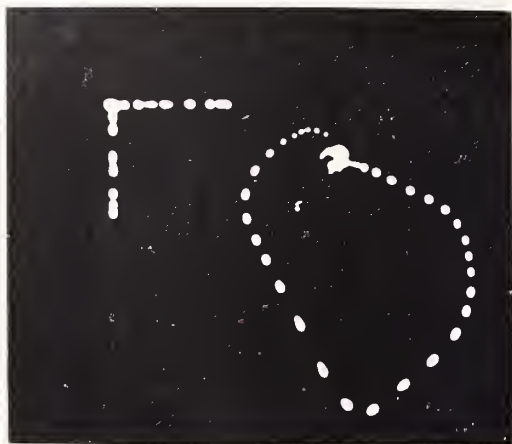


Figure 9. Normal Master's two-step (Case 2).

H



S



F

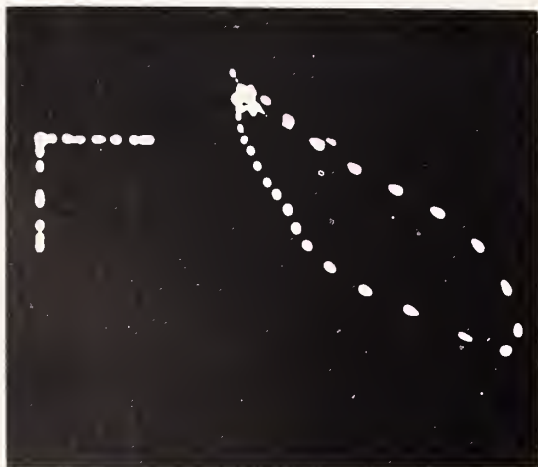


Figure 10. Normal vectorcardiogram (Case 2). H = Horizontal, S = Sagittal, F = Frontal planes.

nary arteriograms is a well recognized entity.<sup>15-17</sup> There have been several hypothetical reasons to explain the discrepancy between the angiograms and the clinical history and sometimes electrocardiographic findings in this group of patients. Some of the proposed etiologies

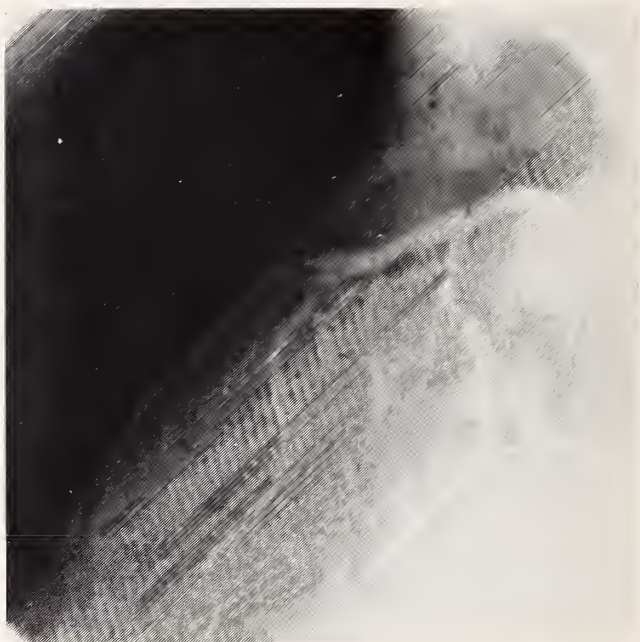


Figure 11. Abnormal left coronary arteriogram (Case 2), showing high degree of obstruction in the anterior descending coronary artery.

of angina in these instances include oxygen-hemoglobin dissociation,<sup>18</sup> a yet unexplained abnormality of the myocardial cell interfering with oxygen utilization (hypoxic cardiomyopathy),<sup>16, 19</sup> widespread small vessel disease,<sup>20</sup> hypoplastic coronary arteries,<sup>21, 22</sup> and coronary artery spasm.<sup>23</sup> Admittedly, some of these patients die suddenly and unexpectedly with deaths compatible with fatal arrhythmias and some have documented subendocardial myocardial infarc-

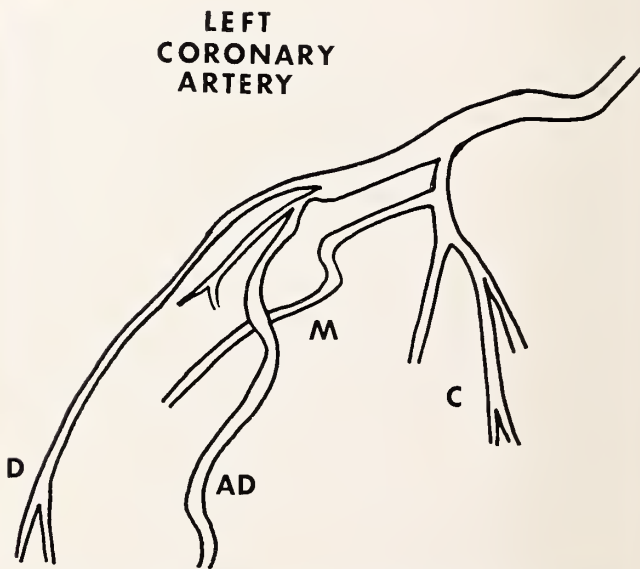


Figure 12. Diagram of the left coronary arteriogram in Figure 11 where D = Diagonal, AD = anterior descending, M = marginal, and C = circumflex branches of the left coronary artery.



tions at autopsy.<sup>16, 17</sup> Since the subendocardium is the most sensitive area to a decrease in arterial oxygenation, this perhaps accounts for the occurrence of subendocardial infarctions. The subendocardium is also rich in Purkinje fibers. Conduction tissue has a low oxygen requirement, and the capillary bed to the Purkinje fibers of the subendocardial region is only 40 per cent as much as the surrounding muscle tissue. The Purkinje rich subendocardium may therefore be predisposed to ventricular arrhythmias and sudden death due to ischemia without over infarction.<sup>24</sup> In general, however, one can say that the prognosis in patients who have chest pain or angina and normal coronary arteriograms is much better than when the major vessels are involved with disease. This emphasizes the importance of the coronary arteriogram in the management of these patients.

The large number of false negative postexercise electrocardiograms merely reflect the inaccuracy and insensitivity of the Master's postexercise electrocardiogram in detecting ischemic heart disease. Our percentage of false negative postexercise electrocardiograms (41%) compares very closely to Gorlin's report (42%).<sup>25</sup> Frequently the resting tracing did not show the extent and severity of the disease and was often normal as case two illustrates. This has also been previously reported.<sup>26</sup> These facts merely emphasize again the importance of doing coronary arteriograms to determine the extent and severity of the coronary artery disease. Until coronary artery disease can be prevented, it appears at present that the management of patients with severe coronary artery disease shall be by some form of aggressive surgical therapy. Coronary arteriograms are essential to determine not only surgical correctable lesions, and candidates for exercise programs,<sup>27</sup> but also to establish the diagnosis in many patients.

We wish to thank Mrs. Lou Kelly for her help in the preparation of this manuscript.

## References

1. Effler, D. B.; Favalaro, R. G. and Groves, L. K.: Coronary artery surgery utilizing saphenous vein graft techniques. Clinical experience with 224 operations. *J. Thorac. Cardiovas. Surg.* 59:147, 1970.
2. Johnson, W. D. and Lepley, D. J.: An aggressive surgical approach to coronary disease. *J. Thorac. Cardiovas. Surg.* 59:128, 1970.
3. Abrams, L. and Adams, D. F.: The coronary arteriogram. Structural and functional aspects. *New Eng. J. Med.* 281:1276, 1336, 1969.
4. Sones, F. M., Jr. and Shirey, E. K.: Cine coronary arteriography. *Mod. Conc. Cardiovas. Dis.* 31:735, 1962.
5. Likoff, W.; Segal, B. B. and Kasparian, H.: Clinical aspects of coronary arteriography. *Amer. J. Cardiol.* 19:497, 1967.
6. Master, A. M. and Rosenfield, I.: Criteria for the clinical application of the two-step exercise test. *JAMA* 178:283, 1961.
7. Judkins, M. P.: Selective coronary arteriography. Part

- I: A percutaneous transfemoral technique. *Radiology* 89: 815, 1967.
8. Judkins, M. P.: Percutaneous transfemoral selective coronary arteriography. *Radiol. Clin. N. Amer.* 6:467, 1968.
9. Demany, M. A.; Tambe, A. A. and Zimmerman, H. A.: Correlation between coronary arteriography and the postexercise electrocardiogram. *Amer. J. Cardiol.* 19:526, 1967.
10. Sewell, W. H.: *Surgery for Acquired Coronary Disease*, Springfield, Ill., Charles C Thomas, 1967.
11. Lipman, B. S. and Massie, E.: *Clinical Scalar Electrocardiography*, 5th Ed. Chicago, Year Book Medical Publishers, Inc., 1965.
12. Gensini, G. G. and Buonanno, C.: Coronary arteriography. A study in 100 cases with angiographically proved coronary artery disease. *Dis. Chest* 54:90, 1968.
13. Hurst, J. W. and Logue, R. B.: *The Heart*. New York, McGraw-Hill Book Co., 1970.
14. Sodi-Pallares, P.; Medrano, G. A.; Bisteni, A. and Ponce De Leon, J.: *Deductive and Polyparametric Electrocardiography*. National Institute of Cardiology of Mexico, Mexico City, 1970.
15. Kemp, H. G.; Elliott, W. C. and Gorlin, R.: The anginal syndrome with normal coronary arteriography. *Trans. Assoc. Amer. Phys.* 80:59, 1967.
16. Likoff, W.; Segal, B. B. and Kasparian, H.: Paradox of normal selective coronary arteriograms in patients considered to have unmistakable coronary heart disease. *New Eng. J. Med.* 276:1063, 1967.
17. Dwyer, E. M.; Wiener, L. and Cox, J. W.: Angina pectoris in patients with normal and abnormal coronary arteriograms. *Amer. J. Cardiol.* 23:639, 1969.
18. Eliot, R. S. and Bratt, G.: Paradox of myocardial ischemia and necrosis in young women with normal coronary arteriograms. Relation to abnormal hemoglobin-oxygen dissociation. *Amer. J. Cardiol.* 23:633, 1969.
19. Neill, W. A.; Kassebaum, D. G. and Judkins, M. P.: Myocardial hypoxia as the basis for angina pectoris in a patient with normal coronary arteriograms. *New Eng. J. Med.* 279:789, 1968.
20. James, T. N.: Pathology of small coronary arteries. *Amer. J. Cardiol.* 20:679, 1967.
21. Grossman, L. A.: Diminutive coronary artery syndrome. *JAMA* 188:1111, 1964.
22. Grossman, L. A. and Burko, H.: Diminutive coronary arteries and congenital coronary anomalies: Interesting cause of angina and myocardial infarction in the young. *J. Tenn. Med. Assoc.* 61:687, 1968.
23. Whiting, R. B.; Klein, M. D. and VanderVeer, J.: Variant angina pectoris. *New Eng. J. Med.* 282:709, 1970.
24. Guy, C. and Eliot, R. S.: The subendocardium of the left ventricle. A physiologic enigma. *Chest* 58:555, 1970.
25. Most, A. S.; Kemp, H. G. and Gorlin, R.: Postexercise electrocardiography in patients with arteriographically documented coronary artery disease. *Ann. Intern. Med.* 71:1043, 1969.
26. Martinez-Rios, M. A.; Bruto Da Costa, B. C.; Cecena-Seldner, F. A. and Gensini, G. G.: Normal electrocardiogram in the presence of severe coronary artery disease. *Amer. J. Cardiol.* 25:320, 1970.
27. Kattus, A. A., Jr.; Hanafee, W. N.; Longmire, W. P., Jr.; MacAlpin, R. N. and Rivin, A. V.: The UCLA interdepartmental conference: Diagnosis, medical, and surgical management of coronary insufficiency. *Ann. Intern. Med.* 69:115, 1968.
28. Richardson, H. L.; Graupner, K. I. and Richardson, M. E.: Intramyocardial lesions in patients dying suddenly and unexpectedly. *JAMA* 195:254, 1966.
29. Roitman, D.; Jones, W. B. and Sheffield, L. T.: Comparison of submaximal exercise ECG test with coronary cineangiogram. *Ann. Intern. Med.* 72:641, 1970.

(Continued on page 316)

# A Case Report

## *Malignant Meningioma With Extensive Pulmonary Metastases*

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EXTRACRANIAL METASTASES of meningiomas are rare; however, a number of cases have been reported in the literature. The metastases may be limited or widespread, but the majority of these patients die of recurrent primary tumor or an intercurrent disease rather than because of the metastases. The following case report is unusual in that the lung became the site of extensive metastatic involvement leading to fatal pulmonary insufficiency.

Another unusual feature was a marked elevation of serum alkaline phosphatase, histochemically correlated with the tumor and apparently the result of the presence of large masses of enzyme producing tumor tissue in the body.

### Clinical History

This 40-year-old male was admitted to the University of Kansas Medical Center in February 1961, with a four-month history of suboccipital headache, neck pain, staggering gait, nausea and vomiting.

His past history was noncontributory. His general physical and neurological examinations were within normal limits except for bilateral papilledema.

Chest and skull x-rays were normal. Carotid angiography showed a homogenous tumor stain in the right posterior fossa. The major arterial supply was from the tentorial artery of Benasconi and Cassanri. The sigmoid sinus appeared open.

On February 21, 1961, a right suboccipital craniectomy was done. A firm, red-purple vascular tumor was seen in the right posterior fossa and was felt to be arising from the tentorium and the adjacent sigmoid sinus. With the exception of a small piece of tumor attached to the wall of the sigmoid sinus, the tumor was totally excised. His postoperative course was uneventful. By May 1961, he was entirely asymptomatic and his neurological examination was normal. He returned to work.

He was seen in the outpatient clinic periodically and continued to do well until 1969.

In August 1969, he was re-admitted to the University

of Kansas Medical Center with a one-month history of suboccipital headache and speech, balance, and coordination difficulty.

His examination showed a somewhat slowed mental status, dysarthria, ataxia, especially on tandem walking

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**A case of malignant metastasizing meningioma is reported. The patient was 40 years old when he had a tentorial meningioma removed. This recurred nine years later and metastasized to the lungs, pancreas, kidneys and liver.**

**The pulmonary metastases were so extensive that they ultimately led to death by respiratory failure. The tumor was a mixed fibroblastic and angioblastic meningioma with papillary structures present in the recurrent tumor and in some of its metastases. An unusual feature was the marked elevation of serum alkaline phosphatase which in the absence of bone involvement and with minimal hepatic involvement by tumor could be ascribed to the large combined mass of metastatic meningioma tissue which was histochemically rich in this enzyme.**

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with a tendency to fall to the right, impaired finger-to-nose and heel-to-shin tests on the right, and mild nystagmus on right lateral gaze. His old craniectomy incision was firm and bulging.

Skull x-rays showed only the anticipated postoperative changes. A brain scan showed an area of increased uptake in the right posterior fossa suggesting a recurrent tumor. A chest x-ray showed two soft tissue densities in the base of the right lung at the cardiophrenic angle, one lesion being 4 centimeters in diameter and the other just anterior to it was 1 centimeter in diameter. It was felt that these lesions represented metastatic disease. Despite extensive

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search no other primary malignancy could be found. Carotid and vertebral angiography showed evidence, much as before, of a tumor in the right posterior fossa.

On August 25, 1969, his old incision was opened and a subtotal excision of the tumor was carried out. This mass was growing out of the previous craniectomy site and again was firm, vascular, and red-purple in color. The tumor was removed in a piecemeal manner, making frequent use of the cutting loop. The tumor was removed medially as far the edge of the foramen magnum, posteriorly and inferiorly to the limits of the posterior fossa, and superiorly to where only a thin rim of cerebellum was left between the tumor and the tentorium. It was felt that total tumor removal could not be achieved and it would not be prudent to remove the anterior shelf of the tumor overlying the various cranial nerves. His postoperative course was essentially unremarkable and by mid-November 1969, his neurological examination was within normal limits. At that time a thoracotomy was tentatively planned for the following January. However, it was about then that he began a progressive downhill course.

He was re-admitted to the University of Kansas Medical Center in February 1970.

At this time, chest x-ray showed enlargement of his chest lesions (as compared with his films in August, the calculated doubling time was 10 months). His brain scan was positive, suggesting persistent tumor in the right posterior fossa.

He received 4,000 R over four weeks time and 5-FU, 1 gram weekly intravenously over the same time.

His last admission was in October 1970. He was alert but emaciated with severe dyspnea, and slightly slurred

speech. He had bilateral rales, distended neck veins, a trace of pedal edema, and rather marked peripheral cyanosis and fingernail clubbing.

His chest x-rays showed both lung fields to be almost completely filled with tumor (*Figure 1*). His hemoglobin was 8.9 grams per cent, hematocrit 28 per cent, white blood count 20,400, alkaline phosphatase was 49.7, and 53.0 BSB units. Arterial blood gases (on room air) showed a  $PO_2$  of 34,  $PCO_2$  32 and pH 7.48.

He was given pulmonary support, was digitalized and received 2 units of packed cells; on October 26 he received Vincristine 2 milligrams intravenously, Cytosin 1,000 milligrams intravenously and Prednisone 80 milligrams. These medications had no obvious effect and he died quietly on October 27, 1970, with signs of pulmonary insufficiency.

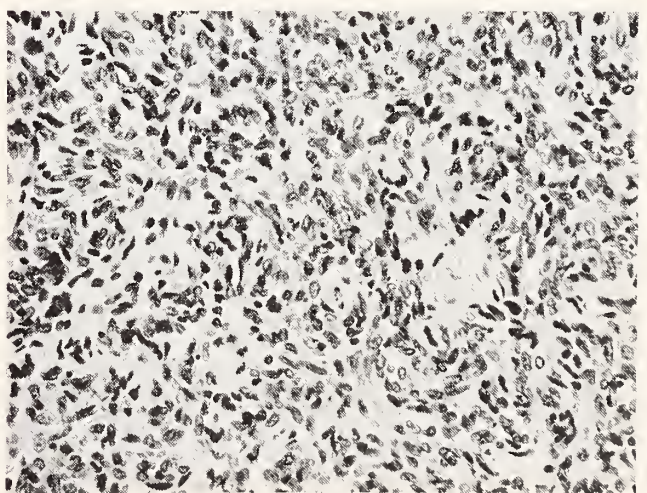
### Pathological Findings

Sections of the *tumor removed at the first operation* in 1961 showed it to be a moderately cellular meningioma composed mainly of spindle-shaped cells with elongated nuclei (*Figure 2*). No whorling or psammoma bodies were observed, but in some areas a rhythmical arrangement suggesting palisading was seen. The tumor was quite vascular in many areas, a feature best seen on reticulin stain, and some of the tumor cells were oriented at right angles to the capillary walls. In some areas the reticulin stain showed a dual pattern: areas with numerous blood vessels suggesting an angioblastic meningioma were seen side by side with less vascular fibroblastic areas with the reticulin fibers in parallel arrangement. The tumor cells showed little pleomorphism although an occasional hyperchromatic nucleus and a rare mitotic figure could be observed.

Sections from the *recurrent mass* in 1969 resembled in many respects the original tumor from eight years



*Figure 1.* Chest x-ray taken 2 weeks prior to patient's death shows multiple dense, mostly round shadows consistent with metastatic nodules.



*Figure 2.* The original tumor from 1961 is composed of wavy bundles of elongated cells with ill-defined cell borders and oval to spindle-shaped nuclei. H.E.  $\times 300$ .



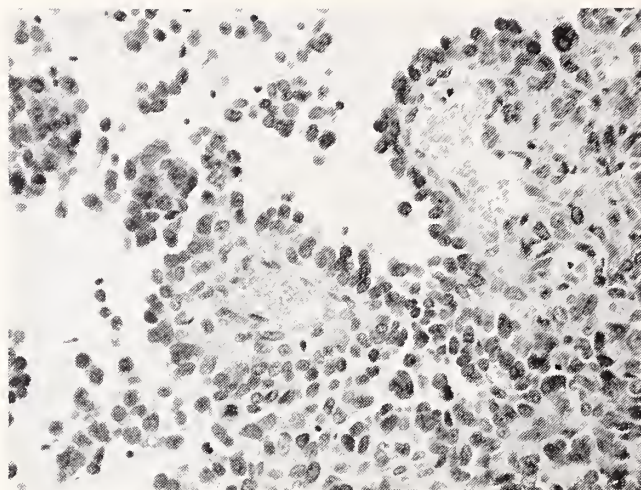


Figure 3. Recurrent tumor in 1969. In looser areas the perivascular tumor cells simulate a papillary pattern and resemble epithelial cells. H.E.  $\times 400$ .

ago, but the tumor cells were more pleomorphic, many had bizarre hyperchromatic nuclei and numerous mitotic figures were seen. The tendency of the tumor cells for perivascular arrangement was still present and in looser areas this resulted in a striking papillary pattern which to some extent resembled a papillary carcinoma (Figure 3). In several areas, tumor cell invasion of small blood vessels could be observed (Figure 4).

At autopsy a few small tumor nodules were found to have grown into the scar of the previous right suboccipital craniectomy. A residual mass of meningioma was found attached to the lower surface of the right tentorium and this replaced the greater part of the right cerebellar hemisphere (Figure 5). The tumor was gray-white, moderately firm with irregular areas of hemorrhages and cystic liquefaction necrosis. No gross invasion of dural sinuses was noted. Despite the presence of this residual tumor mass, at the time of autopsy no signs of increased intracranial pressure were noted on the brain.

The most striking findings of the general autopsy were in the lungs and the pancreas. The visceral pleurae of the lungs had a bosselated appearance and numerous firm nodules could be palpated through them. On sectioning, both lungs were studded with a multitude of well-circumscribed, firm nodules varying in size from 1 to 5 centimeters in diameter, practically replacing the entire lung parenchyma in all lobes with the intervening residual lung tissue showing sign of compression atelectasis (Figure 6). The tumor nodules had a fleshy consistency and a gray-pink color. The walls of the major bronchi were not invaded by tumor.

The body of the pancreas contained numerous, sharply circumscribed, round nodules which replaced but did not infiltrate the pancreatic parenchyma. The largest and most superficial nodule measured 5 centimeters in diameter. The head of the pancreas and especially the area of the ampulla of Vater were free of tumor.

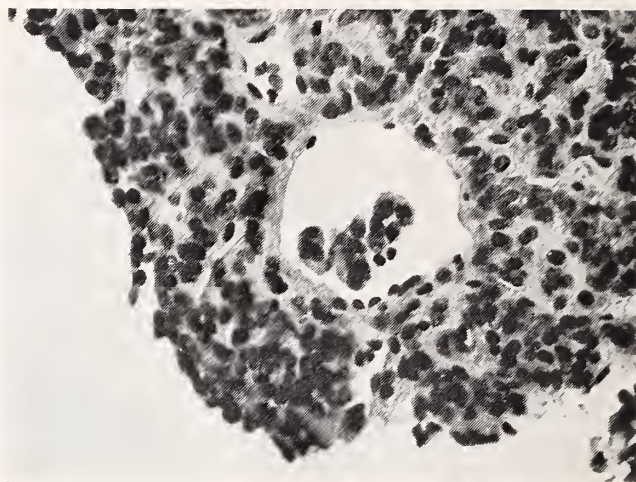


Figure 4. Recurrent tumor in 1969. Invasion of a small vein by tumor cells. H.E.  $\times 400$ .

The kidneys contained a few metastatic nodules. Four small discrete nodules were present in the liver, the largest measuring 0.7 centimeter in diameter. No destruction of hepatic parenchyma was evident and there were no signs of obstruction of the biliary tree.

No other visceral metastases were found and the skeletal system showed no signs of metastatic involvement.

Sections of the residual tumor attached to the tentorium showed essentially the same structure as the last surgical specimen except for extensive areas of necrosis probably at least partly related to the effects of radiation. The pulmonary metastases revealed many tumor



Figure 5. Residual meningioma replacing most of right cerebellar hemisphere.





Figure 6. Near complete replacement of both lungs by metastatic tumor nodules.

cell clusters filling the alveoli with preservation of some alveolar septa and destruction of others. In many areas the papillary character of the tumor was quite striking. Usually there was a thin-walled blood vessel in the core of the papillary formation (Figure 7). The surrounding lung tissue showed compression atelectasis alternating with emphysematous, distended alveoli. The metastases in the pancreas looked very similar to the original tumor of 1961 containing mostly wavy bundles of spindle-shaped cells and many capillaries. No papillary features were seen. The few small metastases in the liver formed globular masses with many tumor cells having pleomorphic, hyperchromatic nuclei. In the kidneys the metastases occupied mostly the interstitium, separating but not destroying individual glomeruli and tubules. (This is the growth-pattern frequently seen when tu-

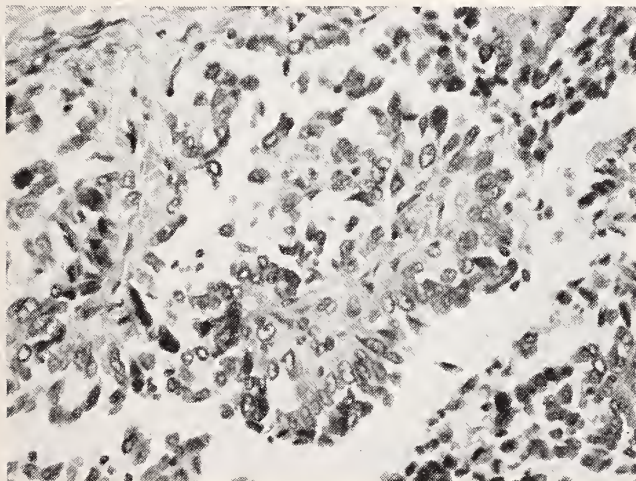


Figure 7. From a pulmonary metastasis. Perivascular papillary growth of tumor cells. (Similar to pulmonary meningioma metastases reported by Cushing and Eisenhardt and others.) H.E.  $\times 400$ .

mors of mesenchymal origin, lymphomas or leukemias invade the kidneys.)

Histochemical analysis (Dr. Sil) showed considerable amounts of alkaline phosphatase both in tumor cells and in basement membranes of tumor capillaries. The former were more pronounced in the residual brain tumor and the lung metastases (Figure 8), the latter in the pancreatic metastases.

## Discussion

It is not the purpose of this paper to review all the reported instances of extracranially metastasizing meningiomas. An excellent review of the entire literature up to 1963 was presented by Glasauer and Yuan<sup>4</sup> and additional reported cases of the past seven years were included in the report of Shuangshoti and co-workers.<sup>12</sup> The latter also found that the four most common sites of extracranial deposits are lung, liver, pleura and

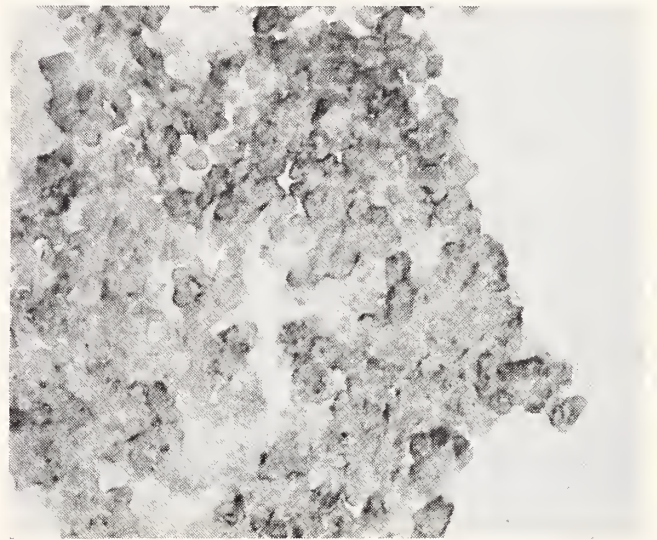


Figure 8. Tumor cells in pulmonary metastasis stained for alkaline phosphatase. Positive staining of intracellular enzyme.

lymph nodes. Men appear to be more often affected by metastasizing meningiomas despite the fact that meningiomas are more frequent in women. It is of interest that although angioblastic meningiomas are relatively rare, they make up about 15 per cent of the metastasizing cases. Even with widespread metastases, patients usually succumb to a recurrence of the primary tumor or to an intercurrent disease. By the time of the last admission, the ever increasing number of pulmonary metastases in our patient created a problem of severe respiratory distress which proved to be insurmountable. Objective signs related to the respiratory difficulties were the marked clubbing and cyanosis of the fingertips, as well as grossly abnormal blood gas values suggesting anoxia.

In the literature, most patients with pulmonary metastases did not have enough replacement of pulmonary parenchyma to cause respiratory distress (Cushing and



Eisenhardt,<sup>2</sup> Russell and Rubinstein,<sup>11</sup> Jurow,<sup>6</sup> Strang *et al.*,<sup>13</sup> Meredith and Belter<sup>8</sup>); however, in Ringsted's<sup>10</sup> case of a meningothelial meningioma with bilateral pulmonary metastases, dyspnea and cyanosis did occur, but this was apparently mostly due to a massive hemorrhagic pleural exudate which recurred after thoracentesis. In the case of Christensen *et al.*,<sup>1</sup> an attempt was made to remove the pulmonary metastases by resecting the entire left lung. The patient died three days later and at autopsy the right lung was found to have metastases, too.

The intriguing papillary pattern of some meningiomas has been observed by Cushing and Eisenhardt,<sup>2</sup> not only in the pulmonary metastases but also in the intracerebral recurrent tumor of their patient. It is of interest that several authors, among them Christensen *et al.*,<sup>1</sup> Ringsted<sup>10</sup> and Hamblet,<sup>5</sup> doubted the authenticity of Cushing and Eisenhardt's case in that they felt that the last recurrence and the pulmonary metastases were part of a separate tumor, a carcinoma of the lung; Ringsted called it an "adenopapillary tumor," and Hamblet stated that "it did not match any recognized meningeal tumor." This papillary pattern has since been confirmed by Russell and Rubinstein<sup>11</sup> in a well documented case of metastasizing meningioma and our case could also be regarded as almost an exact histological replica of Cushing and Eisenhardt's as well as Russell and Rubinstein's case. We believe that the papillary arrangement of tumor cells around blood vessels is analogous with the pattern found in hemangiopericytomas. The latter form a distinct group of meningeal tumors and may also be found as a component in a more complex meningeal neoplasm. Our patient manifested both the fibroblastic and the "angioblastic" (hemangiopericytomatous) elements in his tumor. A further evidence as to the meningeal origin of the metastases was the fact that the renal and pancreatic metastases had no papillary structure and were predominantly fibroblastic.

Another unusual feature was the highly elevated serum alkaline phosphatase (53 BSB units)\* during the last hospitalization. This was of particular interest in the absence of bone metastases and the very limited liver involvement by a few small nodules without obstruction (serum bilirubin was normal). Histochemical examination of meningiomas (Osske and Jänisch,<sup>9</sup> Fabina *et al.*<sup>3</sup>) has shown the presence of alkaline phosphatase in the tumor cells, but it apparently takes a large combined tumor mass to significantly elevate the serum levels of that enzyme. In our patient the main sources for this elevated enzyme level were undoubtedly the extensive pulmonary metastases and histochemically the tumor cells were rich in that

enzyme, particularly in the residual tentorial mass and in the lung metastases.

## References

1. Christensen, E.; Kiaer, W. and Winblad, S.: Meningeal tumours with extracerebral metastases. *Brit. J. Cancer* 3:485-493, 1949.
2. Cushing, H. and Eisenhardt, L.: The story of Dorothy Mae Russell. In: *Meningiomas. Their classification, regional behaviour, life history and surgical end results. Vol. II*, pp. 692-719. Reprinted by Hafner Publishing Co., New York, 1962.
3. Fabiani, A.; Monticone, G. F. and Schiffer, D.: Histochemical study of hydrolytic enzymes in meningiomas. *Psych. & Neurol., Basel*, 1954:95-105, 1967.
4. Glasauer, F. E. and Yuan, R. H. P.: Intracranial tumors with extracranial metastases. *J. Neurosurg.* 20:474-493, 1963.
5. Hamblet, J. B.: Arachnoidal fibroblastoma (meningioma) with metastases to liver. *Arch. Path.* 37:216-218, 1944.
6. Jurow, H. N.: Psammomatous dural endothelioma (meningioma) with pulmonary metastasis. *Arch. Path.* 32:222-226, 1941.
7. Kruse, F., Jr.: Meningeal tumor with extracranial metastasis. A clinicopathological report of 2 cases. *Neurology* 10: 197-201, 1960.
8. Meredith, J. M. and Belter, L. F.: Malignant meningioma: case report of a parasagittal meningioma with multiple extracranial metastases to the vertebrae, sacrum, ribs, clavicle, lungs, liver, left kidney, mediastinum and pancreas. *Southern Med. J.* 52:1035-1040, 1959.
9. Osske, G. and Jänisch, W.: Zur Enzymhistochemie der Meningeome. *Acta Neuropath.* 9:290-297, 1967.
10. Ringsted, J.: Meningeal tumors with extracranial metastases. *Acta Path. & Microbiol. Scand.* 43:9-20, 1958.
11. Russell, D. S. and Rubinstein, L. J.: *Pathology of Tumours of the Nervous System*. Baltimore, Williams and Wilkins Co., 1963, p. 58.
12. Shuangshoti, S.; Hongsaprabhas, Ch. and Netsky, M. G.: Metastasizing meningioma. *Cancer* 25:832-841, 1970.
13. Strang, R. R.; Tovi, D. and Nordenstam, H.: Meningioma with intracerebral, cerebellar and visceral metastases. *J. Neurosurg.* 21:1098-1107, 1964.
14. Tietz, Norbert W.: *Fundamentals of Clinical Chemistry*. Philadelphia-London-Toronto, W. B. Saunders Co., 1970, p. 404.

## Coronary Arteriograms

(Continued from page 311)

30. Benchimol, A., *et al.*: Chest pain with or without abnormal electrocardiograms in patients with normal coronary arteriograms. *Ariz. Med.* 26:341, 1969.
31. Lim, H. F.; Dreifus, L. S.; Kasparian, H.; Najmi, M. and Balis, G.: Chest pain, coronary artery disease, and cine-arteriography. *Chest* 57:41, 1970.
32. Cohen, L. S.; Elliott, W. C.; Klein, M. D. and Gorlin, R.: Coronary heart disease. Clinical cinearteriographic, and metabolic correlations. *Amer. J. Cardiol.* 17:153, 1966.
33. Proudfit, W. L.; Shirey, E. K. and Sones, F. M., Jr.: Selective coronary arteriography. Correlation with clinical findings in 1000 patients. *Circulation* 33:901, 1966.
34. James, T. N.: *Anatomy of the Coronary Arteries*. New York, Paul B. Hoeber, Inc., 1961.

\* Bessey-Lowry-Brock units, normal for adults 1.4 to 5.4 units.<sup>14</sup>



# Growing Pains—

## *—Establishing an Outpatient Adolescent Clinic*

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IN DECEMBER 1968, several psychiatric residents approached me to discuss the possibility of establishing an outpatient adolescent clinic. The clinic was visualized as one in which the adolescent could be treated as a single entity without the usual compartmentalization that is often seen in university hospitals. With the support of other faculty members, especially Donald C. Greaves, M.D., chairman of the Department of Psychiatry, the clinic was established in February 1969. We distributed information concerning the existence and goals of our clinic to local schools, courts, and social agencies. At first much time was spent by a resident physician and nurse in contacting school counselors and explaining our services. Soon patients began coming.

The adolescent and his accompanying parents were interviewed. Physical examinations and laboratory data were performed when indicated. A basic battery of psychological testing was done, and further testing was done if indicated. Attempts were made to get psychological test information on parents. School records were gathered, as well as court records when known.

When the clinic first started, we met two hours on Monday afternoon. The first hour was for seeing adolescents and their parents. The second hour was for reviewing gathered material and making recommendations concerning further evaluation, diagnosis, and treatment. Many were seen in individual therapy by personnel at all levels of training, i.e., medical students, residents, and staff. We have recently begun to refer cases elsewhere for treatment.

As the clinic continued, one hour a week was simply not enough time for us to review all the adolescents who had been seen. Often all our time was spent solely in making recommendations for further diagnostic workup, e.g., projective psychological testing, or a neurological evaluation including an EEG.

Approximately six months after its inception we increased the time of the weekly clinic meeting to two hours a week. During this two hour session any and all topics could be presented. These would include diagnostic evaluation, problems in therapy, interesting articles from the literature, free-flowing discussion of problems of adolescence and therapy, and follow-up of cases being seen.

As time progressed we found it more efficient to have individual appointments set at the mutual convenience of clinic personnel, adolescent, and parents. We have found schools very willing to excuse students to come for evaluation and treatment.

We have had local representatives of an adolescent information and referral service come and "rap" with us concerning problems of getting drug users to come for evaluation. This has been a learning experience for us. We have gained much valuable information on which drugs are currently in use, their street names, composition, price, and hazards of use.

There has been a steady increase in the number of people who participate in the clinic. There are now a staff psychiatrist, a social worker, two staff psychologists, and a full-time nurse. More and more of the psychiatric residents elect to spend time in our clinic. We have had several medical students attend. The psychology interns have spent time with us. Several of our nursing faculty, as well as student nurses, have become involved.

Because of the increasing number and changing nature of the personnel involved in our clinic, we are currently engaged in changing our structure. We are forming two evaluation teams which include people from all disciplines—psychiatry, social work, psychology, and nursing—and levels of experience. They meet outside the scheduled weekly clinic time to discuss a particular adolescent during the process of diagnostic evaluation. The formation of teams provides both service and teaching functions. When the evaluation is complete, a presentation may be made to the entire clinic staff. At such times the probation officer or school counselor involved may be invited.

Several important outgrowths of our clinic have arisen. Because of the ever increasing demand for therapy time and therapists, thought was given to doing group therapy. One of the clinical attending staff has been induced to give a seminar on Adolescent Group Therapy. This has been an important addition in terms of teaching and treatment. Because of the need regularly to involve family members in the treatment of adolescents, a seminar on Family Therapy was instituted with the help of another clinical staff. Attendance by professional personnel at all levels of sophistication and training at these two seminars has continued to increase.

*(Continued on page 326)*

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# KUMC Trauma Conference

## *G.I. Bleeding and Respiratory Failure in a Patient With Severe Head Injury*

*Edited by F. W. RECKLING, M.D., and*

*ARLO S. HERMRECK, M.D., Kansas City, Kansas\**

**Dr. Lowery (Surgical Intern):** The patient for presentation is an 18-year-old white male who was a passenger in the front seat of a motor vehicle involved in an accident. He was partially thrown through the windshield. The patient was unconscious from the initial impact and suffered respiratory arrest enroute to the hospital. The ambulance personnel used a resuscitator to breathe the patient on the way to the local hospital. Upon admission, he had a blood pressure of 80/60 with a pulse of 100. At that time the patient was unresponsive except to painful stimuli which would cause him to flex both arms and legs. He was noted to have partial amputation of the first three fingers of the right hand and a fracture of the right femur. He also had a large scalp laceration on the right side. Three days later he was thought to have localizing signs, and the neurosurgeons at this institution were consulted by the patient's physician about the possibility of a subdural hematoma. He was transferred to KUMC and upon arrival was found to be fully responsive to painful stimuli. A carotid arteriogram was done shortly after admission and revealed a small left-sided subdural hematoma.

**Dr. Peltier:** Dr. Bernell, would you comment on the arteriogram at this stage?

**Dr. Bernell (Neurosurgical Resident):** On the skull films we can see a large skull fracture extending from the left occipital region over the sagittal sinus into the frontal region (*Figure 1*). On the lateral film you can see a small mass at the vortex displacing the superior sagittal sinus inferiorly (*Figure 2*). Probably the total quantity of this subdural hematoma is about 5 cubic centimeters.

The neurological examination revealed decorticate posturing, dysconjugate gaze and unequal pupils, all pointing toward a brain stem malfunction at the time of admission to this hospital. Certainly, a small subdural hematoma of this size at the vortex could not be responsible for the patient's symptoms. That is

the reason we elected not to operate. Because this was associated with the fracture over a major sinus, we felt that the bleeding was venous in origin and probably self-limiting.

**Dr. Peltier:** What are the indications for cerebral angiography in general?

**Dr. Bernell:** The indications for angiography in head injuries are a suspected mass—lesion or blood clot, manifested by progression of neurological symptoms or lateralizing signs. His doctor thought that he was becoming less responsive, and that his left pupil was beginning to dilate.

**Dr. Peltier:** Dr. Bernell, how was this patient treated?

**Dr. Bernell:** We treated this patient with supportive measures. The head of his bed was elevated to decrease cerebral venous pressure which lessens cerebral swelling. We also gave him steroids in attempt to lessen the cerebral edema. A tracheostomy was carried out so that ventilatory support could be provided.

**Dr. Peltier:** What's the prognosis in this kind of brain injury?

**Dr. Bernell:** The prognosis varies a great deal from injury to injury and with the age of the patient. Only time will delineate the full extent of his neurological deficit, if any.

**Dr. Peltier:** Does anyone have a question for Dr. Bernell?

**Dr. Thal:** What was the indication for use of steroids in cerebral edema?

**Dr. Bernell:** Decadron is very good for reducing cerebral edema secondary to irritating lesions such as brain tumors.

**Student:** Do you use hyperventilation to reduce cerebral swelling?

**Dr. Bernell:** We do in acute situations when we're trying to gain enough time to get an arteriogram or take the patient to the operating room.

**Dr. Peltier:** Dr. Kaplan, do you want to very briefly outline the treatment and management of the fracture of the femur?

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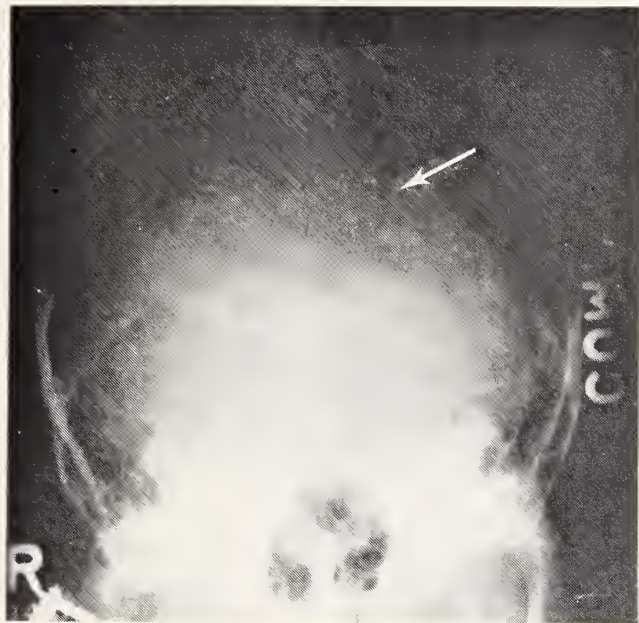


Figure 1. A-P view of skull showing fracture (arrow) over the left frontal region.



Figure 2. Lateral view of arteriogram showing a small mass lesion at the vortex (arrow).

**Dr. Kaplan (Orthopedic Resident):** Balanced skeletal traction was used in treating the patient. A pin was placed in the proximal portion of the tibia in order to apply traction and reduce the fracture.

**Dr. Peltier:** Dr. Thal, would you like to comment on his chest problem? The patient was noted to have a low arterial oxygen tension upon admission. Is this due to pulmonary contusion?

**Dr. Thal:** Probably a combination of several factors. In this case, there was an element of pulmonary contusion and microatelectasis. He definitely had reduced oxygenation on admission, but showed a dramatic response to continued positive pressure breathing with an end tidal pressure of 10 centimeters of water. I think his arterial blood gases went from a  $pO_2$  of about 40 to 50 millimeter mercury to about 130 millimeter mercury on 60 per cent inspired oxygen.

**Dr. Peltier:** Dr. Lowery, what happened to the patient after his initial treatment?

**Dr. Lowery:** On the twelfth day postinjury, blood was obtained from the levine tube, and he was transfused. On the thirteenth day the patient became hypotensive, and the gastric bleeding was massive. He was subsequently operated upon, and a 1 centimeter gastric ulcer was found to be the cause of bleeding.

**Dr. Reckling:** Could we have the neurosurgeon's comments on the frequency and severity of gastrointestinal hemorrhage after head injuries?

**Dr. Bernell:** G.I. bleeding is seen fairly frequently in head injuries. The original patient with this problem was described by Rokitsansky. Cushing described 11 patients, none of which had head injuries. Most of them had posterior fossa tumors. This is the same ulcer that

is seen with stress and burns. This is called a Cushing ulcer, or a stress ulcer, and is usually located on the lesser curvature of the gastric wall. Depending on which series you read, it's found in 1 to 7 per cent of patients who have sustained a head injury. We have seen G.I. bleeding, in my experiences, more frequently than this. Usually, this problem can be controlled by administering antacids through the nasogastric tube. Three days prior to this man's massive bleeding, we started him on Probanthine and Maalox and thought we were on top of the problem. Dr. Kemp Clark, at Parkland Hospital in Dallas, has studied these patients. He found that the more severe the head injury, the more gastric acid these patients produce. In the average decerebrate patient, there was about 30 or 35 milliequivalents of acid per 12 hour period. Maximal acid output occurred about the fifth or sixth day in Clark's series, but varied a great deal from one patient to another. One patient put out 114 milliequivalents of acid in 12 hours.

**Dr. Reckling:** What are the mechanisms for the increased acid output?

**Dr. Maxwell:** There are two mechanisms whereby gastric acid secretion is increased in CNS lesions. In animals, if one stimulates the anterior hypothalamus, you notice an immediate increase in gastric acidity. This is blocked by sectioning the vagus nerves. This is probably responsible for the Cushing ulcer. In addition, with stimulation of the posterior hypothalamus, one can see a delayed but significant rise in gastric acid output. I don't know of any work that's been done with gastric mucus and so forth, but one certainly sees a rise in gastric acidity with this type of stimulation. It does not quite reach the levels of that seen when the anterior hypothalamus is stimulated. This is not affected by va-



gus sectioning but is obliterated by adrenalectomy. I think there are probably two neurogenic mechanisms: one vagal and the other endocrine that lead to gastric hyperacidity in head trauma.

**Dr. Peltier:** What was done for this patient? Did he have a vagotomy or a gastric resection?

**Dr. Saffo (General Surgery Resident):** This patient was operated upon, and exploration of the duodenum revealed it to be free of an ulcer.

Upon opening the stomach, we found an ulcer on the lesser curvature which was sutured with silk to stop the bleeding, and then a vagotomy and pyloroplasty were performed.

**Dr. Peltier:** What happened to this patient following the operation?

**Dr. Lowery:** Postoperatively, he did well except for two occasions of bleeding requiring transfusion. Following the recovery from the G.I. bleeding, he developed respiratory problems which required increasing concentrations of inspired oxygen and ventilatory support to keep his arterial saturation at an adequate level. Also, it was noted that the peak airway pressures had to be progressively increased to breathe this patient. This was a progressive type thing which subsequently resulted in his death. One day before his demise he was noted to have a tension pneumothorax on the right side. This was treated with a chest tube but did not affect the ultimate course.

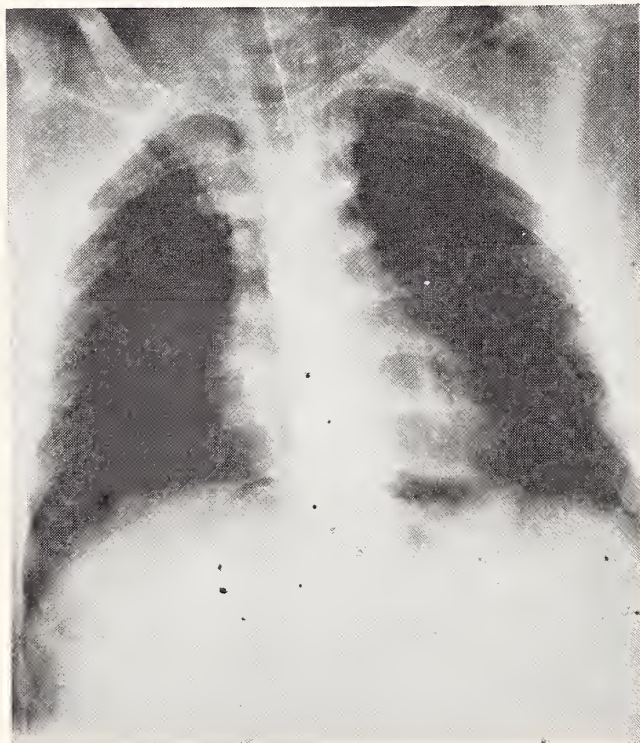
**Dr. Peltier:** Now, Dr. Hermreck, tell us why you think he had this respiratory distress syndrome.

**Dr. Hermreck:** Well, first of all, I'd like to see his chest x-rays. Initially, upon admission, his lung fields

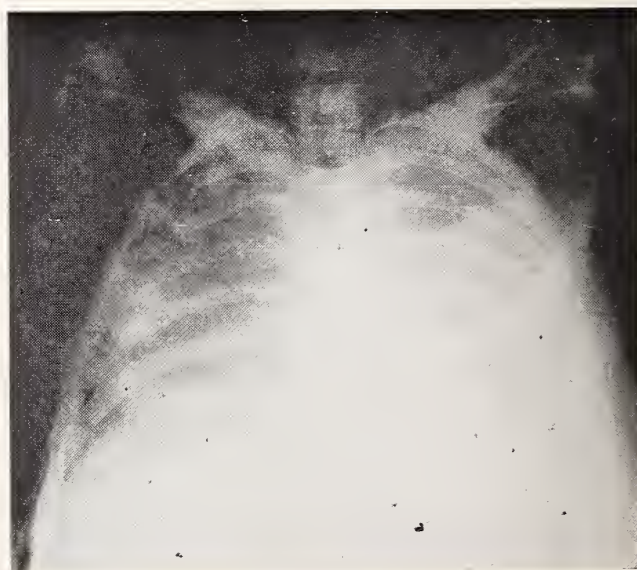
were clear (*Figure 3*). Then we began to see this progressive generalized infiltration until it appears that he almost has a uniform consolidation of his lungs (*Figure 4*).

Early in head trauma, the cause of pulmonary dysfunction is usually due to increased intracranial pressure, which causes a reflex bradycardia, increased left atrial pressure and pulmonary edema in 30 per cent of these patients. Left atrial pressure is elevated due to the negative inotropic effects of the vagus on the heart. Fat embolism, due to the fractures, can also account for early respiratory distress and, if present, should have presented early in the patient's course. Another consideration is shock. There is a condition known as the shock lung syndrome, but this again usually presents between 24 and 36 hours following the shock episode which for this patient was the period of G.I. hemorrhage. Nobody is quite clear of the cause for this problem. There has been a considerable amount of work done on this. Some people think there is depletion of lung surfactant either due to decreased synthesis of this substance or accelerated degradation. Decreased surfactant activity results in atelectasis and also decreased regional compliance of the lung causing an uneven distribution of perfusion in relation to ventilation. One thing we have to think of here is fulminating pneumonia, and certainly this could present and cause the problem that this man had. Another consideration is aspiration of gastric contents, but it is unlikely that this patient aspirated with a cuffed endotracheal tube and nasogastric tube in place.

Oxygen toxicity of the lungs can also cause respiratory dysfunction. Numerous individuals have demonstrated in laboratory animals, and in some instances humans, that high concentrations of oxygen is toxic to the



*Figure 3.* Chest x-ray on admission.



*Figure 4.* Chest x-ray one day prior to death showing bilateral, diffuse infiltrates. A chest tube is present in the right pleural cavity.



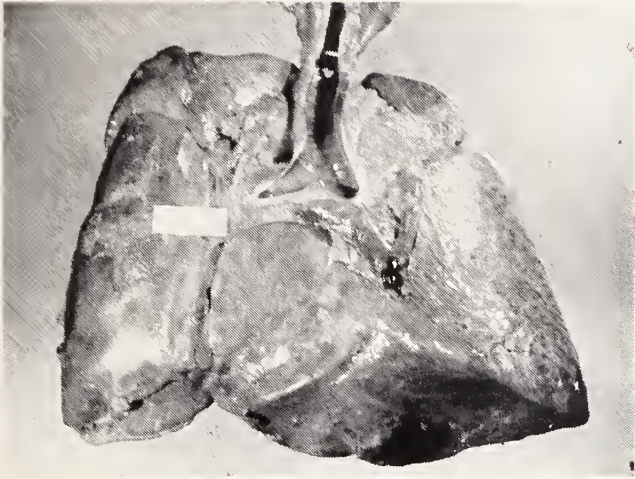


Figure 5. Gross view of posterior surface of lungs at postmortem examination. Note the purulent exudate over the pleural surfaces of the consolidated non-collapsed lungs.

lungs. Kistler did a beautiful study in rats where he placed them for approximately 96 hours in an environment with an oxygen concentration of 100 per cent and ambient oxygen tensions of about 750 millimeter mercury. After about 72 to 96 hours, these animals developed severe pulmonary edema. Examination of the lungs with electron microscopy showed generalized pulmonary capillary endothelial fragmentation. The alveolar cells and other lung parenchymal tissue appeared to be fairly well preserved. Of course, any time a capillary leaks, large protein molecules (with molecular weights from 40 to 150 thousand) are lost with the fluid. This is why one gets the fibrin or the hyaline membranes lining the alveoli in these patients and also in experimental animals.

**Dr. Maxwell:** We were very aware of the fact that this man was in pulmonary difficulty before he had his gastrointestinal bleed. He was on a MA-1 ventilator with humidity and suctioned frequently to provide optimal respiratory support. Why couldn't we stabilize this situation? What happened to him?

**Dr. Hermreck:** I think you did all you could do. There is no magic treatment for this problem. Let's look at the record; he did receive 16 blood transfusions.

The experience and articles coming from Vietnam and other institutions show that there is a lot of particulate matter in the blood we use for transfusions which can plug pulmonary capillaries. Although we have a major and a minor cross-match, there is often subclinical incompatibility of the blood. These subclinical transfusion reactions can result in aggregates which plug vessels and result in increased pulmonary capillary permeability, allowing fluid to weep into the interstitial and alveolar spaces. This again can set the stage for infection and other ventilatory problems.

**Dr. Peltier:** Was an autopsy done? Could we have the pathology report?

**Dr. Seitz (Pathology Resident):** The primary findings are very interesting. Grossly you can see the lungs with a tremendous purulent exudate on the pleural surfaces (Figure 5). In the lower lobes you will notice there are some cavities which on microscopic sections actually contain purulent exudates and granulation tissue. On microscopic examination, this patient had a very severe acute bronchopneumonia. Most of the alveoli were filled with polymorphonuclear leukocytes and a few macrophages (Figure 6). Numerous leukocytes were also present in the inner alveolar septi. There was tremendous vascular congestion. In some areas there were focal micro-abscesses with actual destruction of the alveolar wall. We cultured *Klebsiella pneumoniae* from this patient's lung, and the microscopic pictures I have described are compatible with

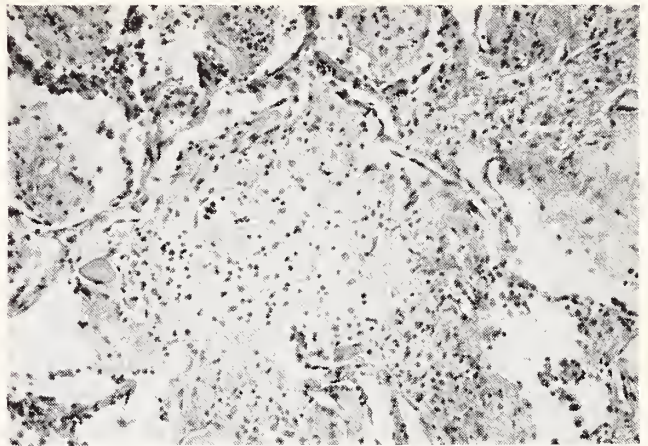


Figure 6. Microscopic view of alveoli filled with polymorphonuclear leukocytes and a few macrophages.

*Klebsiella pneumoniae* in that you get a very severe destruction of the alveolar septi in numerous areas.

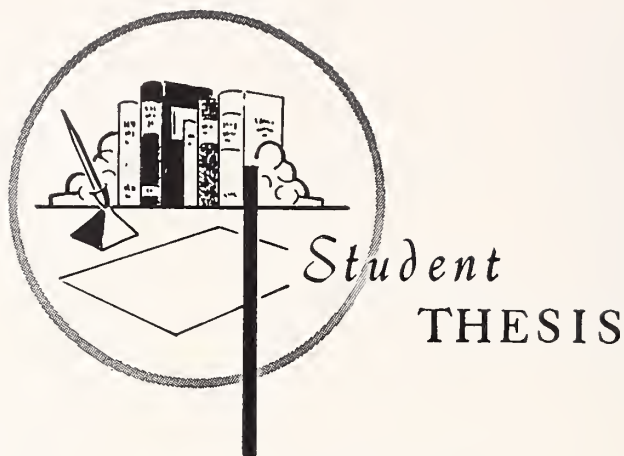
Grossly, there were subarachnoid contusions of the basal frontal lobes and left occipital lobe of the brain. There was also a traumatic cyst of the brain stem. Examination of the stomach revealed a healing gastric ulcer with sutures present and mild gastritis. The remainder of the postmortem examination was unremarkable.

**Dr. Peltier:** What was the cause of death?

**Dr. Seitz:** The cause of death was a very fulminant pneumonia.

## References

1. Bendixen, H. H.; Egbert, L. D.; Hedley-Whyte, J.; Laver, M. B. and Pontoppidan, H.: *Respiratory Care*. St. Louis, C. V. Mosby Company, 1965.
2. Eiseman, B. and Ashbaugh, D. G. (eds.): Pulmonary effects of nonthoracic trauma. *J. Trauma* 8:623, 1968.
3. Kistler, G. S.; Caldwell, P. R. B. and Weibel, E. R.: Development of fine structural damage to alveolar and capillary lining cells in oxygen-poisoned rat lungs. *J. Cell Biol.* 32:605, 1967.
4. Moore, F. D.; Lyons, J. H.; Pierce, E. C., Jr.; Morgan, A. P., Jr.; Drinker, P. A.; MacArthur, J. D. and Dammin, G. J.: *Post-Traumatic Pulmonary Insufficiency*. Philadelphia, W. B. Saunders Company, 1969.
5. Watts, Clark C. and Clark, Kemp: Gastric acidity in the comatose patient. *J. Neurosurg.* 30:107, 1969.



## *Allergic Penicillin Reactions*

**JAMES C. PITTS, III, M.D.,\*** *Kansas City, Kansas*

DESPITE THE RISK of allergic reactions, the penicillins are among the first drugs of choice for all gram positive infections because of their bactericidal activity and low toxicity. Reactions to penicillin are estimated to occur in 2 to 5 per cent of the general population, and in up to 10 per cent of subjects who previously have been treated with these drugs.<sup>1-7</sup> Present evidence indicates that patients with hives, asthma, hay fever, eczema, and other drug sensitivities appear to be more likely to have anaphylactoid reactions to penicillin. Anaphylaxis caused by penicillin reactions occurs in 0.015 to 0.04 per cent with a fatality rate of 0.0015 to 0.002 per cent.<sup>1, 8</sup> Patients allergic to one penicillin are usually allergic to all other penicillins, though not necessarily to the same degree. In a study done by Welch, of 809 reactions to antibiotics reported, 793 were due to penicillin (in 1957) and 611 of those to injected penicillin. Oral preparations of penicillin were implicated in 35 cases, but it is of note that no deaths were reported in this group. Subsequently deaths have been reported with the oral penicillins by others, but the numbers remain low. Scattered reports of violent reactions with topical applications of penicillin have also appeared.<sup>7, 9</sup> Allergic reactions to penicillin now account for 10 per cent of the reported adverse drug reactions in the U. S. and are the most common cause of anaphylactoid shock.<sup>2</sup>

### **Allergic Reactions**

Penicillin reactions of the "immediate" type usually

occur within 20 minutes after administration of the drug. Minor early symptoms may include sneezing, itching of the palms or axilla, vague apprehension, weakness, coughing and shortness of breath, or unexplained spike in fever. The reaction may be limited to flushing, generalized pruritus, or urticaria; or it may be of the anaphylactic type, including sudden vascular collapse, shock, cardiac arrest, bronchospasm, respiratory depression, and laryngeal edema.

"Accelerated" reactions begin from about a half hour to about 48 hours after initiation of therapy. They resemble immediate reactions, but are usually less severe and rarely, if ever, include hypotension or laryngeal edema. Erythema, with or without fever, is more common.

Most penicillin reactions are "delayed," developing several days or even weeks after the use of a penicillin. Urticaria, occurring several days after penicillin administration, is the most frequent adverse allergic reaction. Involvement of skin and mucosa include the development of rash, urticaria, vesicles, bullae, angioneurotic edema, exfoliative dermatitis, black hairy tongue, and asthma. Hematologic manifestations are: neutropenia, eosinophilia (Loeffler's syndrome), hemolytic anemia and purpura, and coagulation defects. Reactions of vascular and collagen systems are systemic lupus erythematosus, periarteritis nodosa, and necrotizing angiitis. Various other adverse effects include drug fever, liver necrosis, glomerulonephritis, acute renal failure, and pachymeningitis. Transient urticaria, fever, and joint pain account for a large proportion of reactions and occur most commonly after injection of the long acting formulation, benzathine penicillin. More unusual reactions include pericarditis, toxic psychosis, and hematemesis due to an urticaria-like reaction of the gastric mucosa.

\* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. Pitts recently completed his internship at the University of Kansas Medical Center, Kansas City, Kansas.



Gastrointestinal irritation, including diarrhea, may occur after the use of an orally administered penicillin, but such irritations are seldom severe enough to discontinue treatment, and are mostly due to the penicillin itself. Penicillin G, when given in large amounts, may cause cortical irritation, including convulsions, especially in patients having decreased renal function. Chronic brain damage may also occur in this instance.<sup>2, 4, 7</sup>

### Hypersensitivity Theories

The penicillin nucleus consists of 6-amino-penicillanic-acid (6-APA) and all forms of penicillin are derivatives of 6-APA acylated at the amino group in the 6 position. This free amino group, corresponding to the alpha-amino group of cysteine, can form a covalent bond with carboxylic groups of other amino acids or peptides; the carbonyl group in the 5-position also forms linkages with E-amino groups of amino acids, peptides, or proteins which can undoubtedly resist, up to a point, the chemical processes employed in extraction. It is therefore not surprising to find that 6-APA, as prepared from natural penicillin G by addition of acylase-producing coliforms to deep vat cultures, contains even after standard BP or USP purification procedures, residues of a proteinaceous substance. This protein substance can be separated by dialysing 6-APA to exhaustion, in which case the retentate is devoid of antibacterial activity or B-lactam structure. Hydrolysis of this product in hot HCl under N<sub>2</sub> yields a range of amino acids, indicating an origin from a protein or peptide much more complex than 6-APA, natural penicillin, or any complex formed by antibiotic molecules.

This protein provokes formation of specific hemagglutinating antibody of both 7S and 19S type and skin sensitizing antibody, the latter being of gamma A types while the former were of gamma G and gamma M respectively. Used for skin test in six human subjects known to be hypersensitive to penicillin, the protein elicited wheal and flare reactions and, in one subject, anaphylaxis. Only two of these subjects reacted to 6-APA from which the protein had been removed by dialysis. There was, therefore, no doubt that a potent antigenic proteinaceous component was firmly bound to 6-APA prepared biosynthetically.

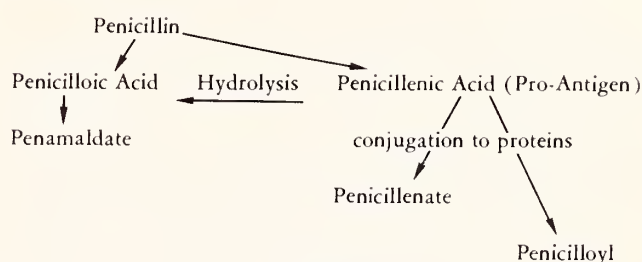
Immediate allergic reactions appear to be more closely linked to the protein, though the fact that this complex is strongly cross-reactive with penicillins but not with cephalosporins indicates that 6-APA or some product thereof is essential as a haptenic determinant, and further, that the configuration of the sulfur ring is probably more important than the lactum ring in this respect.

In the semisynthetic penicillins, as in 6-APA, the protein may be derived partly from the coliform enzyme used by deacylation, whereas in penicillin G it must be formed from peptides present in the fermentation liquor.

Whatever the protein source, and it is likely that more than one set of biochemical precursors are involved, this protein must carry penicilloyl hapten to confer immunogenic specificity and allergenic cross-reactivity.

When this protein impurity was removed, another substance formed in the purified penicillin upon storage. It was separated and would elicit passive cutaneous anaphylaxis response in guinea pigs sensitized with penicilloyl-specific antiserum. The substance was quite different from the previous impurity. Therefore, the protein impurity was not responsible for the entire immunological activity of the penicillin.

In the early 1960's it became apparent that more than one antigenic determinant was involved in penicillin allergy. The proposed scheme of penicillin metabolism is shown in *Figure 1*.



*Figure 1*

Penicillenic acid, a highly reactive molecule which forms spontaneously and readily from penicillin, was found to be the pro-antigen capable of forming protein conjugates which induced antibody formation. The penicilloyl protein was found to elicit marked cutaneous reactions at a level as low as 0.01 micrograms ( $\mu\text{g}$ ), whereas 10  $\mu\text{g}$  of the purified penicillin produced an insignificant response. On the other hand, 2  $\mu\text{g}$  of the original, contaminated penicillin evoked an intense skin reaction. Also, a direct correlation was found between the relative immunogenicity of the penicillins and their degree of conversion to penicillenic acid in solution.

Deproteinized penicillin G has been given to hypersensitive subjects without adverse results. However, deproteinized penicillin G will cause delayed reactions since it readily degrades in aqueous solution to benzylpenicillanic acid, which forms stable conjugates with protein, either by mixed disulfide linkages or by amide linkages. Such conjugates are immunogenic with, respectively, penicillenic or penicilloic acid specificity, and there is evidence that these degradation products are involved as haptens in some allergic reactions. Penicillin G can undergo penicilloylation directly and behave like a hapten in delayed as well as in immediate responses.

The reason for the low figure of reactions to penicillin probably resides in the power of the intact molecules or degradation products coupled as univalent haptens to neutralize the reaction by combining with antipenicilloyl antibody leading to what de Weck calls a "built in

inhibitor" system, which could also explain some of the other immunologic paradoxes.<sup>3, 6, 10-14, 16, 17</sup>

It is likely that the etiology of hypersensitivity to penicillins depends upon biologic and ecologic factors wider than the therapeutic use of the drugs. These other factors include the prevalence of fungi capable of producing penicillin-like molecules, the use of the drugs in animal feeding and veterinary practice, addition of crude antibiotics to milk to prevent decomposition—a practice by no means uncommon until recently in some dairy farming areas—and other ecologic considerations. (The Food and Drug Administration has reported that 3 to 11 per cent of dairy products are contaminated with penicillin.) Collectively, these factors provide a variety of opportunities for low-grade sensitization to penicillin antigens, and it is not unreasonable to suppose that, in individuals thus affected, a few injections of therapeutic preparations can then convert the low-grade sensitization into the extraordinary hypersensitivity which is the unique feature of penicillin allergy.<sup>1, 3, 6</sup>

### Detection of Penicillin Allergy by Skin Test

In the group with immediate allergic reactions, antibodies to penicillin are found within one week and this reaction is mediated by skin sensitizing antibodies. It has been suggested that these potentially fatal reactions are predictable by prior skin testing. The various methods employed in attempts to identify subjects allergic to the penicillins include skin testing with the drugs as well as with the derivative penicilloyl-polylysine, conjunctival testing, serum hemagglutination test, indirect basophilic degranulation tests, and passive transfer test. None of these, however, are infallible. Some of these tests have been discarded because of the length of time involved in running the test, and others because of the high incidence of false negatives. Two preparations now being used for the detection of penicillin sensitivity are preferred by many investigators. These are penicilloyl-polylysine (PPL), and the "minor determinant mixture" (MDM), which contains a solution of penicillin and several of its degradation products. Since PPL and MDM are not generally available, many clinicians use a scratch test with various dilutions of penicillin.<sup>5, 7, 8, 10, 12, 13</sup> It must be pointed out, however, that some investigators have found that the number of negative reactors to skin test procedures who subsequently develop immediate systemic reactions after administration of penicillin is comparable to the 1-2/1,000 who have these reactions when the "low risk" group is created by history of no prior penicillin reaction alone.<sup>5</sup> Therefore, in patients with no history of penicillin allergy, it is debatable whether any screening skin test should be done before administration of penicillin.

If the history of prior penicillin allergy is uncertain,

or in patients with a history of accelerated or delayed reactions, an antimicrobial other than penicillin should be given. If this is not feasible, or if penicillin is considered much more effective than an alternative drug in a serious infection, a scratch test can be performed to help determine the likelihood of a severe immediate reaction to penicillin. The test can be started with a drop of penicillin G solution containing 1,000 units per milliliter, followed by a scratch test with a solution containing 10,000 units per milliliter. This can be followed by an intradermal test—0.01 milliliter of a solution containing 1,000 units per milliliter. One should probably test with equivalent dilutions of the specific penicillin preparation to be used. However, direct skin tests using penicillin G as the antigen have not successfully predetermined all those who would develop penicillin allergy. There have been a few reports of (1) negative tests prior to anaphylactic reaction, (2) negative tests in individuals having had previous anaphylactic reactions, and (3) severe reactions have occurred from the skin test itself.<sup>7, 17, 18</sup>

If a penicillin is urgently needed by a patient with a history of prior severe penicillin reactions, and the patient cannot tolerate any alternative drug, desensitization may be attempted. Starting several hours before desensitization is begun, a parenteral corticosteroid or antihistamine is administered as an intravenous infusion, which is continued through the initial stages of desensitization. The success of desensitization is unpredictable, and it is a potentially dangerous procedure which should be done only in hospitalized patients under constant supervision by experienced personnel, with equipment for respiratory and circulatory assistance at the bedside.

### Treatment of Penicillin Reactions

In the event of an immediate anaphylactoid reaction, epinephrine (0.3 to 1.0 ml. of 1:1,000) is the drug of choice. Parenteral corticosteroids, ACTH, and antihistamines cannot be depended upon, though they are useful in the treatment of accelerated or delayed reactions. Intubation or tracheostomy followed by ventilation and administration of oxygen may be necessary if there is airway obstruction. Repeated doses of epinephrine may be needed after five to 10 minutes of initial dose. However, since excess dosages of epinephrine may cause cardiac arrhythmias, evaluating the patient's condition and his need for repeated doses of epinephrine requires frequent reassessment. As a rule, allergic reactions of late onset are self-limited when penicillin is discontinued, and require little, if any, treatment. It has not been shown that penicillinase (Neutrapen) is effective in controlling immediate reactions, and the drug is not without risk because of its own sensitizing potential. Some authors believe it should be used while Medical Letter consultants believe it should not be used.<sup>2, 7</sup>



<i>Disease</i>	<i>Alternate Antibiotic</i>	<i>Dose</i>
Pneumococcal pneumonia	Tetracycline or Erythromycin	500 mg q. 6 hr. <sup>a, b</sup> 500 mg q. 6 hr.
$\beta$ -hemolytic Streptococcal Infection		
Therapeutic	Erythromycin	250 mg Q.I.D.
Prophylactic	Sulfadiazine	0.5 gm Q.I.D. <sup>c</sup>
Meningococcal meningitis	Tetracycline and Sulfadiazine	500 mg q. 6 hr. <sup>a, b</sup> 1 gm q. 4 hr. <sup>d</sup>
Staphylococcus Infection	Lincomycin or Vancomycin <sup>f</sup>	500 mg T.I.D. 1 gm q. 12 hr. <sup>e</sup>
Gonococcal urethritis	Erythromycin	500 mg Q.I.D. for 5 days
Syphilis	Erythromycin	500 mg T.I.D. for 10-12 days

<sup>a</sup> Oral dose.

<sup>b</sup> IM dose is 250 mg every 12 hours (less with impaired renal function).

<sup>c</sup> After another drug to eliminate the bacteria.

<sup>d</sup> After an initial loading dose of 4 gm.

<sup>e</sup> With normal renal function.

<sup>f</sup> In serious infections only.

### Cross-Reactions with Cephalosporins

The cephalosporin derivatives, cephalothin (Keflin) and cephaloridine (Loridine), are often the alternate drugs of choice for patients who are hypersensitive to the penicillins and who need a parenteral agent effective against bacterial infections for which penicillin is indicated. Contrary to original impressions that cross allergy between penicillin and the cephalosporins was not a significant problem, evidence now exists that patients who have a history of penicillin reactions have a higher risk of allergic reactions to cephalothin than those who do not. In one study, 9 of 22 patients allergic to penicillin were also allergic to the cephalosporins.<sup>23</sup> In another study, among 54 patients who were receiving cephalothin, 7 had allergic reactions to the drug, 2 of which were anaphylactoid in nature. Five of the 7 reactors had a history of previous allergic reaction to penicillin. Nine others who had similar histories received cephalothin and had no reaction, even one who was given the antibiotic a day after the penicillin reaction.<sup>9, 26, 27</sup>

This information must be tempered, however, by the fact that it is well recognized that patients with clear histories of penicillin frequently fail to have a discernible reaction to the antibiotic on subsequent administration. It has been reported that in patients with clear histories of penicillin allergy and who also had positive penicilloyl-polylysine skin tests who were given penicillin, roughly three-fourths failed to have an evident reaction to the drug.<sup>9</sup>

There is yet insufficient evidence available to assess the incidence of allergic reactions to cephaloridine and to the new oral cephalosporin, cephalexin. In one report, of 149 patients receiving cephaloridine, 7 had cutaneous allergic eruptions (4%).<sup>28</sup>

### Alternate Therapy

The problem of alternate drugs can be most serious with penicillin because of the clear advantage of penicillin in certain life-threatening infections.

One of the most difficult problems for a penicillin sensitive patient to encounter is bacterial endocarditis. At present, it appears that the best alternate drug for *Staphylococcus endocarditis* and endocarditis due to *Streptococcus viridans* is vancomycin. Vancomycin is bactericidal and therefore superior to bacteriostatic drugs such as erythromycin. One must be aware, however, that vancomycin is relatively toxic.<sup>9, 30, 31</sup>

In addition to the above, for penicillin sensitive patients with clostridium tetani infections, tetracycline may be used in the dose of 2 gm/day for 5 days. Tetracycline or Streptomycin may also be used in place of erythromycin for gonococcal infection if so desired. In most cases, however, the best substitute is usually erythromycin.<sup>9, 31, 32</sup>

### Conclusion

Because of the risk of severe allergic reactions, penicillin should always be used with caution and never for mild, self-limited infections. If there is reason to believe that the patient is sensitive to penicillin, another antimicrobial agent effective against the organism causing the infection should, if possible, be used. In a rare instance in which no other drug is a reliable substitute, skin tests and attempts at desensitization to penicillin may be indicated. When a cephalosporin drug is used in place of penicillin, the physician should be aware of its own sensitizing potential and its occasional cross-reactivity with penicillin.

### References

1. Reaction to penicillins. *Lancet* 2:673, September 21, 1968.

2. Westerman, G. W.; Corman, A.; Stelos, P. and Nodine, J. H.: Adverse reactions to penicillin. *JAMA* 198:173-174, October 10, 1966.
3. Schwarz, Capt. H. J.: Current status of penicillin allergy: A review. *Milt. Med.* 131:631-635, July 1966.
4. Martin, W. J.: The penicillins. *Lancet* 87:79-88, March 1967.
5. Minkin, W. and Lynch, P. J.: Incidence of immediate systemic penicillin reactions. *Milt. Med.* 133:557-560, July 1968.
6. Allergic factors in penicillins and cephalosporins. *Amer. Heart J.* 75:429-431, March 1968.
7. Penicillin allergy. *Med. Let. Drug Therap.* 10:101, December 13, 1968.
8. Van Arsdell, P. P., Jr.: Allergic reaction to penicillin. *JAMA* 191:239-240, January 18, 1965.
9. Kasik, J. E. and Thompson, J. S.: Allergic reactions to antibiotics. *Med. Clin. N. Amer.* 54:59-73, January 1970.
10. Batchelor, F. R.; Feinberg, J. D.; Dewdney, J. M. and Weston, R. D.: A penicilloylated protein impurity as a source of allergy to benzylpenicillin and 6-aminopenicillanic acid. *Lancet* 1:1175-1177, June 3, 1967.
11. Stewart, G. T.: Allergenic residues in penicillins. *Lancet* 1:1177-1183, June 3, 1967.
12. Cronin, A. E.: Passive cutaneous anaphylaxis with guinea pig and rabbit antibodies to penicillin derivatives. *Aust. J. Derm.* 9:65-69, June 1967.
13. Fellner, M. J.: An immunologic study of selected penicillin reactions involving the skin. *Arch. Derm. (Chicago)* 97:503-519, May 1968.
14. Feinberg, J. G.: Allergy to antibiotics. *Int. Arch. Allergy* 33:437-453, 1968.
15. Rosenblum, A. H.: Penicillin allergy. *J. Allergy* 42:309-318, December 1968.
16. Schwartz, M. A.: Chemical aspects of penicillin allergy. *J. Pharm. Sci.* 58:643-661, June 1969.
17. Hanashiro, P. K. and Weil, M. H.: Anaphylactoid shock in man. *Arch. Int. Med. (Chicago)* 119:129-140, February 1967.
18. Keeney, E. L.: Penicillin allergy. *Calif. Med.* 103:347, November 1965.
19. Redmond, A. P. and Levine, B. B.: The relationship between direct immediate skin tests and passive transfer tests in man. *J. Allergy* 39:51-56, January 1967.
20. Jarish-Herzheimer reaction. *Brit. Med. J.* 1:384, February 18, 1967.
21. Baldwin, D. S.; Levine, B. B.; McCluskey, R. T. and Gallo, G. R.: Renal failure and interstitial nephritis due to penicillin and methicillin. *New Eng. J. Med.* 279:1245-1252, December 5, 1968.
22. White, J. M.; Brown, D. L.; Hepner, G. H. and Worledge, S. M.: Penicillin-induced haemolytic anemia. *Brit. Med. J.* 3:26-29, July 6, 1968.
23. Merrill, S. L.; Davis, A.; Sanlens, B. and Feingold, S. M.: Cephalothin in serious bacterial infection. *Ann. Intern. Med.* 64:1, January 1966.
24. Maheros, M. G.: Penicillin hypersensitivity. *Minn. Med.* 52:1811-1817, November 1969.
25. De Weck, A. L. and Blum, G.: Recent clinical and immunological aspects of penicillin allergy. *Internat. Arch. Allergy* 27:221-256, 1965.
26. Editorial: Cross-allergenicity to penicillin and cephalosporin. *JAMA* 199:495, 1967.
27. Thoburn, R.; Johnson, J. E. and Cluff, L. E.: Studies on the epidemiology of adverse drug reactions. IV. The relationship of cephalothin and penicillin allergy. *JAMA* 198:345, 1966.
28. Brayton, R. G.; MacLean, R. A. and Louria, D. B.: Cephaloridine: Clinical trial in gram-positive and gram-negative infections. *Antimicrobial Agents and Chemotherapy*, pp. 96-100, 1966.
29. Newer penicillins and cephalosporins. *Guy Hosp. Rep.* 115:143-157, 1966.
30. Geraci, J. E.; Nichols, D. R. and Wellman, W. E.: Vancomycin in serious staphylococcal infections. *Arch. Int. Med.* 109:507-515, 1962.
31. Winterbauer, R. H.; Ronald, A. R.; Belcher, D. W.

and Turck, M.: Antimicrobial treatment in patients sensitive to penicillin. *J. Chronic Dis.* 20:407-428, 1967.

32. Rajka, G.: Treatment of gonorrhoea patients with intolerance to penicillin. *Acta Dermatovenereol* 48:532-536, 1968.

## Outpatient Adolescent Clinic

(Continued from page 317)

We have noted an increasing number of referrals from all sources in our metropolitan area, schools, adolescents, parents, courts, social agencies, and on one occasion, from our own in-patient psychiatric service. We have evaluated approximately 300 referrals, ages 12 to 18, over the two years of our existence. We noted a drop in census during the summer months, but have seen this rise with the starting of school. Our nurse has started making home visits in order to better evaluate the social situation of the adolescent.

It is impressionistic at this time, but it seems that many of our adolescents are quite seriously disturbed and need residential treatment. Perhaps our population is skewed since "easy" cases are not referred to us but cared for elsewhere. We are planning to investigate this impression and others more thoroughly at a later date as we review our case material.

This paper was written with the thought in mind to:

1. Present information about an out-patient adolescent unit in a teaching hospital, Kansas University Medical Center.
2. Present some information on the possibilities for teaching about adolescents at all levels of experience in a university hospital.
3. Encourage others to start such clinics.
4. Stimulate others to collect data on adolescents and their families in a systematic, meaningful way.
5. Perhaps help establish the need for additional residential treatment settings for adolescents.
6. Underscore the need to teach all health professionals about adolescents and their problems in a comprehensive way.
7. Show that service and education about a particular area can be integrated without a large budget or expansion of personnel—thus being an exception to Parkinson's Law.

## NEW MANUAL FOR CORONERS

The Kansas Coroners Association announces its new manual containing a thorough listing of investigative procedures in specific types of death is available. Physicians interested in receiving the manual may order it from the secretary-treasurer of the Kansas Coroners Association, William G. Eckert, M.D., Laboratory, St. Francis Hospital, Wichita, Kansas 67214. The price of the manual is \$10.



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# The President's Message

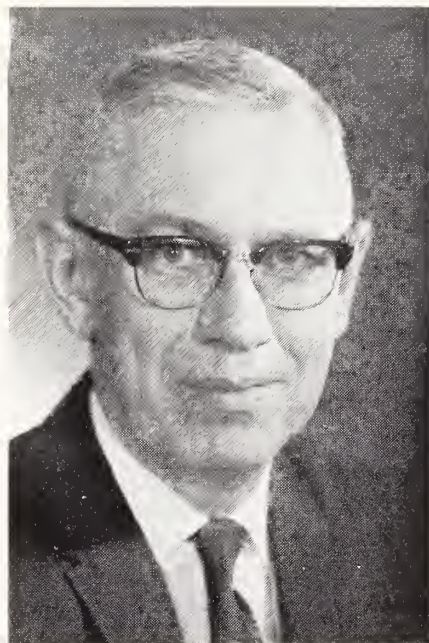
## Support Your AMA

In May, the Kansas Medical Society changed its By-Laws to eliminate mandatory AMA membership. This was done not because of loss of confidence in the parent body, but rather to eliminate a source of irritation among KMS members. Nearly all other states have done the same. Your officers and Executive Committee initiated the move in an effort to strengthen our state society. However, we strongly encourage our members to continue their AMA membership on the new voluntary basis in order to strengthen the voice of physicians in national affairs at all levels.

In addition to many scientific and educational activities the AMA has been in the forefront of the debate on the form of health care in the nation. In this age of controversy it has stood for the preservation of the right of its members to practice free of governmental control. This position is one not taken by the AMA officials, but by its membership speaking through its elected House of Delegates and officers.

In the final analysis, the AMA reflects the will of its members. Our representatives, elected on the basis of AMA members in Kansas, are Dr. John C. Mitchell, of Salina, and Dr. Lucien R. Pyle, of Topeka. Both have served as KMS presidents, and have worked for our Society for many years. They are anxious to hear your views and opinions since they wish to represent Kansas medicine fairly and impartially at the AMA level. Since the AMA is highly visible nationally, it has been the target of all who seek to fundamentally change the health care delivery system. These include both elected officials and radicals of the new left, labor leaders and the extreme right, social planners and professors, and a variety of pressure groups.

This does not mean that those who seek change are in error, not all who expect improvement are



wrong. However, if there is to be a national organization to represent physicians—the providers'—views on health, it must have members. Join *your* AMA and work *within* to make it a better organization, if you will, but *join* so your voice can be heard. If we unite we are strong; in disunity there is certain defeat.

*Dr. J. Reals, M.D.*

*President*

**WILLIAM O. RIEKE, M.D.  
VICE CHANCELLOR FOR  
HEALTH AFFAIRS  
UNIVERSITY OF KANSAS**

On July 1, 1971, Dr. William O. Rieke was installed as Vice Chancellor for Health Affairs at the University of Kansas. The JOURNAL joins the medical profession of Kansas in welcoming him to the state and to the position, a new one which reflects the expanding medical scene in the state.

Dr. Rieke was born in Odessa, Washington, growing up there and in Cashmere, Washington. He received his baccalaureate summa cum laude from Pacific Lutheran College in Parkland, Washington, in 1953 and his Doctor of Medicine degree with honors at the University of Washington in 1958. He remained there as instructor in anatomy, becoming assistant professor in the Department of Biologic Structure in 1961 and associate professor in 1964. From 1963 to 1966, he was also administrative officer in the department.

In 1966, he became Professor and Head of the Department of Anatomy, College of Medicine, State University of Iowa in Iowa City, Iowa. In addition, he has been serving as Acting Dean of the College of Medicine during the year prior to his coming to Kansas. He chaired the College of Medicine Executive Committee in 1969. He also served on the University Editorial Review Board and is a member of the editorial board of the *American Journal of Anatomy*. He is a member of the interdisciplinary basic science test committee of the National Board of Medical Examiners and is special consultant to the Neurological Science Research Training B Committee of the National Institute of Neurological Diseases and Stroke of the National Institutes of Health. In addition to gross and neurologic anatomy, his teaching interests have been in radioisotopes and cellular immunology. His teaching ability is reflected in his receiving the Medical Teacher Honor award, selected by the graduating classes at Washington, for three successive years of his service there and was nominated for Staff Man of the Year by the freshman class at Iowa two years. In 1964, he was named to the U. S. Junior Chamber of Commerce List of Outstanding Young Men in the Nation. Parkland Lutheran University bestowed its Distinguished Alumnus award on him in 1970. In 1969, the American Association of Urologists honored him by choosing him to deliver the Ramon Guiteras Lecture at its 64th annual meeting.

He is a member of Alpha Omega Alpha and Sigma Xi as well as professional societies including the American Association of Anatomists, the American Society of Cell Biology, and the American Association for the Advancement of Science. He was one of



**William O. Rieke, M.D.**

the founders of the Medical Research Society at the University of Washington.

He was married to Joanne R. Schief in 1954 and they have three children.

Dr. Rieke's credentials are ample evidence that the Selection Committee has chosen well. As Vice Chancellor, he will have extensive and continuing opportunity to influence the development and application of health services in Kansas. The Kansas Medical Society and the JOURNAL look forward to working with him in our common goals and wish him well.

## Journal on Microfilm

Microfilmed copies of current as well as all back issues of the JOURNAL are available through University Microfilm Services, a subsidiary of Xerox Corporation. The 35 mm film fits all standard viewers and provides the JOURNAL in miniature at a savings on binding and storage costs. Write for information or send orders direct to University Microfilm Services, 300 North Zeeb Road, Ann Arbor, Michigan 48106.



# Medical-Legal Page

## Patient's Negligence After Malpractice Does Not Bar Damages

The negligence of a patient which occurs subsequent to an act of medical malpractice is not a complete defense to a malpractice suit but will only mitigate damages, the highest court of Kentucky ruled.

A man severely injured his left hand in an industrial accident. He was taken to a hospital, where a general practitioner rendered emergency treatment. The patient continued under the care of the general practitioner in the hospital for a week.

When an infection developed, the patient was referred to orthopedic specialists. They controlled the infection, but it was necessary to amputate his thumb and portions of his ring and index fingers.

The patient was then transferred to a physician for rehabilitation. Rehabilitation efforts were unsuccessful. The physician said that the patient did not perform the recommended exercises.

The patient filed a malpractice action against the general practitioner. At trial, expert medical testimony was offered supporting the claims of both the patient and the physician. The physician also claimed that the patient was contributorily negligent in failing to perform the rehabilitation exercises. At the physician's request, the trial court instructed the jury on the issue of the patient's contributory negligence.

A verdict was returned in favor of the general practitioner. The patient appealed.

Reversing the decision, the appellate court said that a patient's negligence which occurs after a physician's malpractice does not bar recovery by the patient but only mitigates the damages against the physician. Since the jury instruction as to the patient's negligence did not clearly indicate that such negligence could be considered only to mitigate damages, the court remanded the case for another trial.

The jury instruction relating to the community standard of care was also declared erroneous by the appellate court. The jury should have been instructed that the physician was under a duty to use that degree of care which is expected of a reasonably competent physician in the same class to which he belongs, the court held.—*Blair v. Eblen*, 461 S.W.2d 370 (Ky. Ct. of App., Dec. 18, 1970)

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This month's articles are reprinted from Vol. 23, No. 2, May 1, 1971.

## Informed Consent in Vein Ligation

In a medical malpractice action in which a patient claimed that her physicians failed to inform her of the number of scars that would result from the ligation of the veins in her right leg a California jury returned a verdict in favor of the physicians.

A woman consulted a general practitioner concerning the veins in her right leg. He determined that it was necessary to ligate the veins and referred the woman to a specialist.

The specialist informed the woman that the ligation would result in many scars. The woman was admitted to a hospital, and the specialist performed a ligation of the greater and lesser saphenous veins in her right leg. As a result of the vein stripping, the woman had 28 scars on her leg.

The woman filed a lawsuit against both the specialist and the general practitioner. She claimed that the physicians failed to obtain her informed consent to the procedure, in that she was not told how many scars would result. No claim was made that either physician violated any standard of care.

The specialist contended that, prior to surgery, it was impossible to determine the number of scars that would result. The jury returned a verdict for both physicians.—*Wells v. Jordan* (Cal.Super.Ct., Sacramento Co., Docket No. 193057, 1970)

## NEW MEMBERS

*The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.*

Chung S. Chun, M.D.  
K. U. Medical Center  
Kansas City, Kansas 66103

Ward N. Madison, M.D.  
St. Joseph Hospital  
Wichita, Kansas 67218

Robert L. Druet, M.D.  
K. U. Medical Center  
Kansas City, Kansas 66103

Dennis F. Moore, M.D.  
959 N. Emporia  
Wichita, Kansas 67214

Jose Q. Gabatin, M.D.  
8202 Tamarac  
Wichita, Kansas 67206

Willis M. Thorstad, M.D.  
The Menninger Foundation  
Topeka, Kansas 66601

Gene V. Williams, M.D.  
200 W. Ash  
El Dorado, Kansas 67042



## *Personalities*—IN KANSAS MEDICINE

Mahlon H. Delp, professor of medicine at KUMC, has been honored by the American College of Physicians for contributions to internal medicine. Dr. Delp was elected as master, the highest membership category in the 17,000-member international specialty society at its recent annual meeting. There are only 83 masters in the entire ACP.

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New members of the board of directors of the Hertzler Research Foundation include Edward F. Steichen, Lenora; Ralph R. Melton, Marion; Victor E. Moorman, Hutchinson; and A. E. Hiebert, Wichita.

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Dr. and Mrs. Joseph W. Parker, Jr., have moved from Emporia to Marion, Illinois. Dr. Parker has been appointed to the staff of the Veterans' Administration Hospital there.

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Three Society members were honored by Washburn University of Topeka in May. Omer M. Raines, Topeka, was presented the Distinguished Service Award by the Washburn University Alumni Association. William A. Smiley, Junction City, and Frank C. Boggs, Topeka, were recipients of the Washburn University Humanitarian Award.

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Frederick W. Reckling has been named chief of the section of orthopedic surgery at KUMC. Dr. Reckling replaces Leonard F. Peltier, who will become professor of orthopedics at the new University of Arizona Medical School in Tuscon.

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Dr. and Mrs. Murray C. Eddy, Hays, were honored at a coffee at St. Anthony Hospital as part of National Hospital Week activities in May. Dr. Eddy retired from the hospital staff recently.

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John W. Travis, Topeka, has been elected a member of the American College of Physicians.

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Kermit G. Wedel, Minneapolis, was the featured speaker for a program on arthritis presented in Minneapolis by the Kansas Chapter, Arthritis Foundation in cooperation with the Ottawa County Extension Units.

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Dr. and Mrs. Arthur L. Nichols were honored by the medical staff and board of trustees of the Hiawatha Community Hospital in May. The Nichols moved in June to Springfield, Missouri, where Dr. Nichols will be associated with the faculty at the Southwest Missouri State College.

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William W. Abrams, Kansas City, has received the AMA's Physician's Recognition Award for continuing education in the medical profession.

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David R. Davis, Emporia, participated in the ninth annual pediatric seminar held at Baptist Memorial Hospital, Kansas City, Missouri, in May.

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Sherman M. Steinzeig, Kansas City, has been installed as president of the University of Kansas Medical Alumni Association. Other officers from the Kansas City area are John D. Huff, first vice president; Robert W. Brown, secretary-treasurer; and Leo R. Goertz, Chairman of membership and elections.

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Alex Mitchell, Lawrence, has been elected president of the Douglas County Visiting Nurses Association board of directors.

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## *The Man, the Place, and the Time*

Elsewhere in this issue, we introduce and welcome Dr. William O. Rieke who took up his duties as Vice Chancellor for Health Affairs of the University of Kansas on July 1. Such introductions usually satisfy certain dictates of courtesy but are seldom satisfactory to the individual or audience. A concentrated presentation of achievements tends to make the listener uncomfortable, vacillating between disbelief and wondering what he has done with his own life since reaching the zenith of getting his Eagle Scout badge. The subject comes across as some academic deity who couldn't get his head out of the rarefied atmosphere long enough to observe the facts of everyday life, medical or otherwise, much less do anything about them.

It would be incomplete, therefore, not to extend the introduction of this man to include some observations which indicate we have a real, live, breathing, thinking, feeling man. In the first place, you will note he grew up in Odessa and Cashmere, Washington. If you haven't been through Odessa or Cashmere lately, they would have to be classified as small towns. At least small enough that his departure must have been noted. The point is that this is a small-town product who doesn't have to adjust his thinking to the problems of small towns before he can even get started working on them. Furthermore, except for those years in Seattle, for which we'll have to forgive him, he has worked in the atmosphere of rural-small urban life, and his thinking must be tuned to this frequency. So score one for the small towns of Kansas: they have an advocate in the high councils.

It is worth emphasizing that he has been highly esteemed by the students who have come under him. This indicates more than the academic excellence which is apparent in his accomplishments. The young are given to some bizarre expressions of their tastes at times, but they can be disconcertingly accurate in their estimation of a teacher's capabilities. Students, as a rule, do not bestow their respect and approba-

tion lightly, and Dr. Rieke's ability to relate to them should be an invaluable asset in his efforts here. Score one for the students: they have an advocate in the high councils.

It is apparent that Dr. Rieke has fared well with his academic peers. His progress in the hallowed halls has been about as rapid as it could be and still have time to have three children. He has made his way upward from instructor in a basic science department to acting dean of a first-rate medical school in thirteen years. If the latter position didn't chill him completely on trying to run a medical school, he must be made of stern stuff. "Acting" is a qualification they put in front of a title indicating you are supposed to carry the weight without the muscle. He comes to us of his own volition, not through any lack of interest on the part of the Iowans to keep him. His organizational and administrative accomplishments leave no doubt of his capacity to work for the best for his institution. Score one for the teachers: they have an advocate in the high councils.

The relationship between a state-sponsored medical school (where they think they practice the best medicine) and the physicians of the state (who *know* they practice the best medicine) is all too often a fragile thing. It is worthy of note, therefore, that the opinions of the non-institutional clinicians, those he is leaving and those he has met here, were given strong consideration by the committee and have emerged as prime factors in its choice. It is evident that his ability to resolve the differences physicians manage to develop for themselves is a strong plus. He has been described as already having a better understanding of the background, problems, and needs of Kansas medicine than many Kansas physicians themselves. He has ideas and is not going to be backward about promoting them. Score one for the physicians of Kansas: they have an advocate in the high councils.

Although it is a human characteristic to assign to one's own times and experiences a uniqueness which

history will not necessarily confirm, it is safe to say that the tumult of the day will be recorded as one of the major revolutionary changes in the course of world attitudes, values, and functions. In a micro-cosmic sense, Kansas reflects all of the problems of the world—some we have more of than others, some less. The medical scene is a cogent example. The next few years will be more significant in determining the course of medical practice than any similar time in history. The position of the Kansas University School of Medicine has never been more important. In the context of the times, it has always done well. Its leaders have been outstanding, and it and the physicians of Kansas (most of whom are its products) have contributed laudably to the progress of medical affairs. But in times that are more complicated, more stressful, more demanding, the school must accomplish a miracle: compress the mushrooming mass of medical knowledge into more brains in less time at the least cost and place them where they are needed, all in a manner acceptable to the students, faculty, physicians, taxpayers, local, state and federal governments, and news media. Even working toward the miracle will require expertise in politics, sociology, economics, applied psychology, law—and even medicine.

We presume the committee took these requirements into consideration in their deliberations. We hope Dr. Rieke took them into consideration in his acceptance. The committee thinks he has some chance of making some headway toward the accomplishment of the miracle, and Dr. Rieke thinks he would like to have a try at it. It looks as if he is a pretty good bet.

So again we welcome him and urge him to call on the physicians of Kansas for assistance. Our welcome is colored with admiration for his past accomplishments, hope for his future accomplishments, and sympathy for his family.—*D.E.G.*

### STATEMENT ON VENEREAL DISEASE

(In view of the alarming increase in reported cases of infectious syphilis and because gonorrhea is now pandemic in the United States, the Council on Environmental and Public Health, American Medical Association, has prepared the following statement for the information and guidance of medical societies.)

The American Medical Association Council on Environmental and Public Health reports that gonorrhea ranks first and syphilis third among the reportable communicable diseases in the United States. For the year ending June 30, 1970, infectious syphilis rates were eight per cent higher nationally than a year earlier, with annual increases spread over 33

states and an estimated incidence between 70-80,000 reported cases; there are 250,000 cases of all forms of syphilis estimated to be diagnosed and treated each year.

At the same time, gonorrhea morbidity exceeded 573,000 reported cases. Gonorrhea is pandemic in the United States, with an estimated two million cases.

The Council urges medical societies to acquaint their membership with the growing and alarming dimensions of the VD problem. Physicians should take all appropriate measures to reverse the rise in venereal disease and bring it under control.

Physicians in private practice treat approximately 80 per cent of the syphilis and gonorrhea that comes to diagnosis but report to public health departments only one out of every eight cases of syphilis and one out of every nine cases of gonorrhea they treat. Physicians should assist public health departments by reporting the VD cases they treat. Medical societies are urged to cooperate and give broad support to public health authorities. Much effort must still be made by health departments and medical societies to foster mutual trust so that public and private medicine can work effectively for the control of both syphilis and gonorrhea.

The Council also urges medical societies to continue efforts for the enactment of state laws to permit physicians legally to treat VD cases of minors without obtaining parental consent. Currently, 35 states have laws and six states have attorneys general's opinions permitting treatment of minors for VD without permission of parents. Such sanction is not provided in the states of Alabama, Arizona, Georgia, Mississippi, Minnesota, Missouri, Ohio, Wisconsin, and Wyoming.

There are also 11 states which do not have laws or regulations requiring all serological laboratories to report reactive specimens by name of patient and physician to the health department. They are Alaska, Arkansas, Colorado, Idaho, Indiana, Louisiana, Maine, Massachusetts, North Dakota, South Dakota, and Washington. Experience has shown that many serologic laboratories refuse to report names of reactors to the health department until it is required by law or regulation.

The American Medical Association is making VD a national theme for Community Health Week-1971, with suggested dates of October 17-23. Informational and promotional material will be available for medical societies. The AMA publication *PR Doctor*, January 1971, featured the problem of venereal disease, which included reports of excellent programs underway by state medical societies.

The Council encourages the publication of more  
(Continued on page 334)



# Vox Dox

Vox Dox Editor:

The state of Kansas needs more physicians primarily in the field of family practice and in the small communities.

Dr. Reals calls for "Furtherance of Medical Education" and emphasis on family practice programs.

The KUMC faculty proposes expansion of the medical educational facilities in the state, primarily KUMC, with a large expenditure of money.

Dr. Speer calls for more efficient teaching practice at KUMC and effectively blocked the voting of funds for expansion of KUMC in the last legislature.

Perhaps it is time to hear from one in the ranks.

Let's quit procrastinating and face the situation for what it truly is, a crisis that needs attention and solving as quickly as possible. It must be done as cheaply as possible with the maintenance of good quality of medical care.

If we are going to get the projected increase of 1,352 physicians by 1980, as recommended by the Acting Vice Chancellor of Health Affairs of the University of Kansas in his article "Educational Needs for Better Health Care in Kansas" we must do more than spend the taxpayers' money in the way of expansion of medical education facilities.

For instance, the Vice Chancellor pointed out that 60 per cent of each graduating class leaves the state. That is 75 physicians this state has lost. He also said we import 60 per cent of our physicians, but when the report of the constitutional secretary of the Kansas Medical Society is analyzed for 1971, the best we can do is find 51 new members, excluding the new members with student status. That happens to be the same number of KUMC graduates staying in Kansas each year. Where are the 60 per cent imported? It seems to me that the state is not importing new physicians and, therefore, something should be done about keeping KUMC graduates here.

The only reason for the existence of KUMC as a teaching institution is to provide health service personnel for the state. All other functions can be carried out as a private or municipal health center.

The use of tax money is to provide health personnel to the state of Kansas. With all the various aid programs health care per se no longer needs to be subsidized. Is the University medical school fulfilling its obligation to the state when 60 per cent of its graduates leave?

A number of schemes to keep KU graduates in the state have all been notorious failures.

It's time to come to grips with the situation. Make

practice in the state of Kansas mandatory for all graduates of the University of Kansas School of Medicine. This could be limited to three or five years and should be one of the criteria for admission to the school. Many well qualified students are being rejected by the medical school who would willingly accept that requirement for admission. We have all had to meet some responsibility to society at one time or another and have come off none the worse for it.

Mandatory practice in the state will increase the number of physicians by 75 more than we are now getting under the present system. Expansion of KUMC to accommodate 200 students in each class with the present rate of their leaving the state will gain only 30 more. If we expand moderately, teach more effectively and make mandatory practice a reality we could increase the number by 150 each year and provide the number of physicians we need by 1980.

ALBERT E. BAIR, M.D.  
Independence, Kansas

Vox Dox Editor:

There has been, in recent issues, criticism of the University of Kansas Medical Center and its activities, particularly, as regards the expansion of medical education in the state of Kansas.

To those who have been working in this program for some years, actually, since the health survey of the state in 1962 and 1963, under the auspices of the State Board of Health and at the direction of the Kansas State Legislature, it became apparent that there was a great shortage of medical care facilities within the state and that medical care for people in the state was becoming dangerously near gross inadequacy. In past years, continued efforts in this behalf led to no definite results.

Another survey done in 1963 and 1964, for the Kansas Legislature, reaffirmed the need for additional medical personnel to provide necessary services, health care facilities and direct physician care for the people of this state. It was, therefore, apparent that an increase in graduate medical personnel to care for the people of the state of Kansas was an absolute must.

In recent years, there have been additional efforts in this behalf, and much thinking and work by various committees has been done. This led to passage, two years ago, of state legislature funding to improve and promote additional residencies within our state, and this was basically a stepping stone to expand the number of graduates annually produced by the University of Kansas Medical School, from the

original 85 to 250. Through efforts of the present faculty at the University of Kansas, we were informed that this year there will be 144 students enrolled in each class.

Also, a program to concentrate four years of medical education to three years is being introduced, by utilizing summer vacations and, again, with the primary idea of producing sufficient physicians and other medical personnel to attempt to meet the state needs.

This last year, the program of expansion of the K. U. Medical School was to be done, not merely by filling larger buildings in Kansas City (it is questionable as to whether they would be filled if available) but by utilizing those large hospitals which we have in Topeka, Wichita and Kansas City, and to utilize the beds in these hospitals as teaching beds for students. In other words, we would have a liaison program, with medical education under the supervision of the University of Kansas Medical Center, and graduate, hopefully, some 225 to 250 students, annually.

In November of last year, the Board of Regents approved such a program and in our last Kansas Medical Society meeting this program was endorsed by the House of Delegates. There has been continued activity both in Wichita and in Topeka to attempt to develop such educational facilities, so that students may be taught in both of these communities in addition to those in Kansas City and, thereby, create expansion.

It seems, to those of us who have been working in various committees in behalf of such programs, that criticism can certainly be made of past programs which have been attempted, but this in no way changes the absolute situation of the great shortage of physicians. It appears that a more positive attitude should be taken, not on rehashing what may have or may not have been wrong, but on what can be done to improve the supply of medical service to the people within the state in a positive manner. I might reiterate that negativism, at least in my personal feelings, has never accomplished a thing and anything in the negative nature will contribute in no way to the promotion of this most needed expansion of physician care for state needs. Only positive actions must be taken. There is no time to bicker about what may have been wrong, or what might be wrong, but rather we must try to correct these situations and improve and expand our medical education facilities to such a point that our medical needs will be better met in the future than they have to this date, or in the recent past.

A. A. FINK, M.D.  
Topeka, Kansas

Vox Dox Editor:

The pairing of the article by E. D. Lyman, M.D. and D. A. Harper, M.D. in the June 1971 issue was interesting. Central to the issues of prevention of illness, of treatment and rehabilitation is the too seldom mentioned fact that the physician is not in control of the situation. The patient is. As Dr. Harper points out, 30 to 60 per cent of patients comply little or not at all with the instructions given them by their physician, even in the case of acute illness such as beta, hemolytic streptococcal infections.

In this light, development of a "health maintenance organization," encouraged by the federal government and various levels of health planning organizations becomes an exercise simply in physician generosity. We have all recognized that certain classes of patients more or less deliberately make themselves ill, for example alcoholics, and that other classes of patients devour tremendous amounts of physician time and expensive hospital and laboratory maneuvers to determine whether they are ill or not, for example the hysterics and personality disorders. What needs also to be recognized is that a large minority or even a majority of patients will not use the skilled advice and therapeutic regime that their physician sets up for them and so will frequently fail to maintain their health if taught how to do it, or recover their health if given the tools.

The financial setup of a health maintenance organization financially punishes the providers for failure to maintain health. I would suggest that physicians should be extremely cautious about engaging themselves in a system in which they will be penalized for failure, when they have little control over whether failure will occur. Dr. Harper's article needs to be read, reread, and passed on in duplicate to all those people optimistically engaged in planning to solve the problems of health care in the country.

J. W. WIGGS, M.D.  
Great Bend, Kansas

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### Statement on VD

*(Continued from page 332)*

articles in professional journals on venereal disease and its control for the guidance of the profession. Medical societies are asked to support education of patients and the public through more extensive and imaginative use of all available media and through school curricula.





## Book REVIEWS

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**HERNIA REPAIR WITHOUT DISABILITY** by Irving L. Lichtenstein. St. Louis, C. V. Mosby Company. 210 pages.

In the entire history of surgery, no subject has been so controversial as the repair of groin hernias.

Despite centuries of experience and an infinite number of writings on the subject, there is little agreement regarding the surgical anatomy of the inguino-femoral area. Depending on the investigator, the same structure bears different names, and different tissues are called by the same name. There has been too little written about the alteration of the anatomy by hernia and too much debate about the normal structure of the area. Reconstruction, by surgery, of normal anatomic planes can hardly be expected to prevent recurrence when the very presence of hernia attests to the failure of the normal supportive mechanisms.

The book is in the form of an atlas in order to facilitate comprehension of each step of the operation. The drawings are good and the anatomy well demonstrated.

Contents include chapters on Surgical Anatomy of the Inguinal Region; Anesthesia; Direct and Indirect Inguinal Hernia; Sliding Inguinal Hernia; Recurrent Inguinal Hernia; Femoral Hernia and Ventral Hernia.

I recommend this book to anyone doing hernia operations.—*W.H.Z.*

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**CLINICAL APPROACHES TO ENDOCRINE PROBLEMS IN CHILDREN** by Matthew M. Steiner. St. Louis, C. V. Mosby Company. 406 pages.

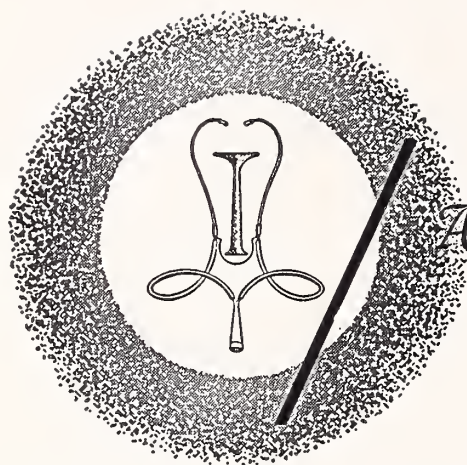
This book approaches endocrinology in a very practical way. Dr. Steiner divides the major problems confronting endocrinologists into problems of height, weight and sex and his book grows from these problems. Of practical importance, he extends

the etiology of the problems beyond endocrinologic ones and includes non-endocrine causes for each major problem in his discussion, citing relative frequencies of endocrine and non-endocrine contributors which he lists at the beginning of each chapter. He concludes, "Most (obesity; cachexia; tallness; shortness; sexual precocity; sexual retardation) in children is not an endocrine problem." A tabular presentation of differential diagnostic considerations from the point of view of pathophysiology follows and lists methods of detection and confirmation. There is a noteworthy emphasis on iatrogenic and drug contributions to each problem. The coverage of endocrine disorders is adequate, but lacks depth and for details the reader is referred to other information sources. The appendix contains useful, normative data and representative growth charts for height, weight, head circumference, other body measurements and velocity of growth.

The following sequence lists in order the amount of space devoted to various problems: short stature 114 pages; precocious sexual development 73 pages; obesity 64 pages; retarded sexual development 42 pages; underweight 36 pages; tallness 31 pages. This is roughly the same sequence as the frequency with which these problems are encountered in our Pediatric Endocrine Clinical practice at the University of Kansas Medical Center.

The author did not intend for this book to be a reference textbook of endocrinology; however, its organization, the inclusion of normative values and insight by the author, stemming from his wide experience in endocrinology, should make this book useful to the physician formulating an approach to the workup of the child with an "endocrine" problem and should be a valuable aid for primary care professionals, pediatricians and other students of the growing child.—*J.G.H.*

*(Continued on page 338)*



## Announcements

*Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's CALENDAR. Notice of the session is posted in advance to allow the physician time to make preparations.*

### AUGUST

- Aug. 24-26 Both patient management and financial aspects of medical practice will be covered in a three-day course sponsored by the University of Tennessee and the Memphis Regional Medical Program. For further information on the course, "The Ideal Practice: Current Trends in How to Achieve It," contact the Division of Continuing Education, University of Tennessee, 800 Madison Ave., Memphis, Tennessee 38103.

- Aug. 29-30 31st annual AMA Congress on Occupational Health, Jackson Lake Lodge, Grand Teton National Park, Wyoming. Write the Div. of Scientific Activities, Dept. of Environmental, Public and Occupational Health, AMA, 535 N. Dearborn St., Chicago, Illinois 60610.

### SEPTEMBER

- Sept. 10-11 22nd annual meeting and 8th Delegates' Assembly, Kansas Heart Association, Hilton Inn, Salina. For information write the Kansas Heart Association, 5229 W. 7th St., Topeka 66606.

- Sept. 13-18 American Electroencephalographic Society and American Society of EEG Technologists, Hotel Radisson South, Bloomington, Minnesota. Write Mrs. Margaret H. Henry, Exec. Secretary, American EEG Society, 36391 Maple Grove Road, Willoughby Hills, Ohio 44094.

- Sept. 20-24 Annual meeting, American Academy of Ophthalmology and Otolaryngology, Convention Center, Las Vegas. Write C. M. Kos, M.D., Exec. Secretary-

Sept. 24

Treasurer, American Academy of Ophthalmology and Otolaryngology, 15 Second St., S.W., Rochester, Minnesota 55901.

Third annual academic assembly devoted to an intensive study of Diseases of the Thyroid, St. Francis Hospital, Wichita. Participating in the lectures and discussions: William McConahey, M.D., Endocrinologist, Section of Internal Medicine, and Donald Childs, M.D., chairman of the Section of Radiotherapy, both of the Mayo Clinic Foundation for Education and Research; John Beach Hazard, M.D., Department of Pathology, Cleveland Clinic; and Richard G. Martin, Chief, Section of Surgery, University of Texas M. D. Anderson Hospital and Tumor Clinic.

Sept. 27-29

7th National Conference, sponsored by the American Cancer Society and National Cancer Institute, Biltmore Hotel, Los Angeles. Write Sidney L. Arje, M.D., c/o American Cancer Society, 219 E. 42nd St., New York, New York 10017.

### POSTGRADUATE EDUCATION

University of Colorado:

- Sept. 27-Oct. 1 *Hospital Medical Staff Conference* (Estes Park)  
Oct. 4-8 *High Risk Infant Care* (limited)  
Oct. 11-13 *Obstetrics and Gynecology*

For further information write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 East Ninth Avenue, Denver 80220.

*(Continued on page 338)*



# Woman's Auxiliary

## *Where There's HOPE There's Life . . .*

If one were to twist an old saying a bit when speaking of the hospital ship HOPE, you could say that "where there's HOPE, there's life." Lots of life. First of all, there are the 140 specialists-teachers who serve in a dual capacity by teaching health professions in the countries they visit, as well as caring for the 108-bed patients in the hospital itself. Then there are the hundreds more that attend the clinics to get that help. Plus the official crew of the ship that is supplied by the Grace Lines.

The S.S. HOPE has been one of the medical auxiliary's projects almost from the time the idea for the ship was born. We have made many contributions in sums of money and in securing needed supplies.

Your correspondent made a trip to Jamaica recently, the present port of the hospital ship. It gleams in the tropical sunshine tied to a dock in the harbor at Kingston, Jamaica, a great white monument to health floating in a sea of incredible blue-green water. Its flags fly proudly. Its name is etched in large letters on the bow and the smokestack for all to see, and the people flock to see it and to use the facilities it provides.

Why Jamaica especially? High population, migration and professional attrition (brain drain) has caused an acute shortage of qualified health personnel at all levels for this island. It is estimated that there is one doctor for each 1,900 people. While district health centers help meet rural needs, even they are understaffed. Often these centers are the only source of medical care for farmers who live away from the coastal urban centers. While tropical diseases have been brought under control, much public health education is still needed, especially in sanitation and good nutrition.

On this ninth voyage to promote better health care to the people and to supply training for health fields, we find that the mission is the first step in a three-year hemispheric program. During the time the HOPE is working in the Caribbean, planning for her 1972 arrival in Brazil is already under way. This preparation even includes digging out the harbor so that it will be ready when the ship arrives. At the same time, contacts in Venezuela are under way for a 1973 arrival, developing a comprehensive medical program for this future port of call as well.

Who does the ship serve, and who do they train? Primarily, they serve the people of the area, adopting the teaching program to the needs of each host

country. What fields do they cover? Course descriptions for the ship include audiology, dietary, electrodiagnostic laboratory, hospital housekeeping, clinical laboratory, medical maintenance for equipment and electrical, electronic and mechanical theory, medical records, orthotics, pharmacy, physical therapy, radiology and scintillation scanning laboratory.

Who takes all these courses? Counterparts, or graduates of formal training programs and personnel who have had on-the-job training with two or more years of experience in the host country, are one segment of the trainees. Students who are currently participating in a formal training program in the host country, or personnel who have received no previous training, are the others.

Who does all this training? Over 140 volunteers and paid employees. Among the volunteers are 18 staff doctors who come for a two-month tour of duty free. Only their transportation is paid by the ship, and board and room is supplied. Incidentally, the food is excellent. The room, for doctors, however, is a dormitory area of the ship on the top deck referred to by the men as "The Jungle." While it is clean, cool and reasonably comfortable, there is a lack of space and privacy. Paid employees include nurses and other hospital staff regularly employed at any hospital. The pay is low, about \$350-400, plus board and room, but most of the people who sign on for the ten-month tour of duty do so because they want to contribute to the work the ship is doing. Housekeeping help, laundry and the like, are hired locally. There often are, in addition, volunteers who come to do secretarial, x-ray, or clerical duties. Sometimes the wives of the doctors who serve on the ship come along to help in any way that they can.

Equipment on the ship is first rate. Up-to-date radiological, surgical, ICU, technical and teaching facilities are provided. Audio-visual teaching equipment has all the areas any good school provides, including closed circuit TV. A lecture hall is used for teaching and for programs, church and the like. The ship is air conditioned and its powerful generators hum and throb, supplying enough power to light a city of 12,000. There is a medical library, recreational facilities, lounge, equipment repair shop, radio station, soda fountain, bakery, butcher and barber shops.

The hospital wards don't remind you so much of those at home, but only because everything is bolted to the floor and because of the conspicuous presence of life preservers and emergency equipment common

to ships. Otherwise, one would think he was in any other hospital. A circle bed keeps an orthopedic patient comfortable. Traction, IV equipment and all the rest common to any hospital are in use as one makes the ward rounds. Pretty nurses in a variety of caps chart progress and tend patients just as they do at home.

What is HOPE accomplishing? For one thing, it is living up to its name "*Health Opportunity for People Everywhere*." Over 1,800 medical professionals have served at home and abroad. The ship's records indicate that her volunteer staff has trained more than 5,700 physicians, dentists, nurses and technicians. She has treated more than 142,000 patients and benefited nearly three million through immunization, examination and other services. All in a little over ten years.

Don't you think that we can truthfully say that the ship and her dedicated staff are living up to the definition of the word *hope* as "trust, desire with expectation of fulfillment, to long for with expectation of obtainment," at least in serving the health needs of some of the world's neglected areas?

Yours, hoping that all of you will see fit to help, or help with, the S.S. HOPE.

Auxiliary Annie

## Book Reviews

(Continued from page 335)

THE JOURNAL acknowledges the receipt of the following books. These books are on loan to the Stormont Medical Library and are available for review. Requests should be directed to the Stormont Medical Library, Stormont-Vail Hospital, Topeka, Kansas 66604.

**Synopsis of Dermatology** (2nd edition) by William D. Steward, Julius L. Dano and Stuart Maddin. St. Louis, C. V. Mosby Company. 445 pages. \$13.85.

**A Synopsis of Pharmacology** (2nd edition) by V. C. Sutherland. Philadelphia, W. B. Saunders Company. 720 pages. \$10.75.

**Wine and the Digestive System** by Salvatore Pablo Lucia. San Francisco, Fortune House. 157 pages. \$3.50.

**Introduction to Protozoology** by Reginald D. Manwell. New York, Dover Publications, Inc. 642 pages. \$4.00.

**Big Fleas Have Little Fleas or Who's Who Among the Protozoa** by Robert Hegner. New York, Dover Publications, Inc. 287 pages. \$2.00.

**Personnel Administration and Labor Relations in**

**Health Care Facilities** by James O. Hepner, John M. Boyer and Carl L. Westerhaus. St. Louis, C. V. Mosby Company. 391 pages. \$15.00.

**The Early Orthopedic Surgeons in America** by Alfred Rives Shands, Jr. St. Louis, C. V. Mosby Company. 190 pages. \$15.00.

**A Textbook of X-Ray Diagnosis** (4th edition), Vol. V: **The Pelvis and the Abdomen**, edited by S. Cochrane Shanks and Peter Kerley. Philadelphia, W. B. Saunders Company. 524 pages. \$22.00.

**Psychology of Emotion** by John M. Dorsey. Detroit, Center for Health Education. 174 pages. \$6.95.

**Selective Bibliography of Orthopedic Surgery** (2nd edition), American Academy of Orthopaedic Surgery. St. Louis, C. V. Mosby Company. 114 pages. \$7.25.

**Infection Control in the Hospital**, American Hospital Association. Chicago, American Hospital Association. 154 pages. \$4.00.

**Healers in Uniform** by Edward Edelson. New York, Doubleday & Company, Inc. 184 pages. \$3.95.

**Progesterone: Its Regulatory Effect on the Myometrium**. Ciba Foundation Study Group No. 34. London, J. & A. Churchill. 193 pages.

**Breathing: Hering-Breuer Centenary Symposium**, Ciba Foundation. London, J. & A. Churchill. 402 pages.

**The Frozen Cell**, Ciba Foundation Symposium. London, J. & A. Churchill. 316 pages.

**Control Processes in Multicellular Organisms**, Ciba Foundation Symposium. London, J. & A. Churchill. 424 pages.

## Announcements

(Continued from page 336)

Sept. 13-15 *Clinical Electroencephalography*, sponsored by the American EEG Society, Minneapolis, Minnesota. Write Dr. Donald W. Klass, EEG Course Director, Mayo Clinic, Rochester, Minnesota 55901.

For further information on the following continuing education courses, contact the Continuing Education Department, The Children's Hospital, 1056 E. 19th Ave., Denver, Colorado 80218.

Sept. 13-15 *Regional Newborn and Perinatal Care*, sponsored by the American Academy of Pediatrics and The Children's Hospital, Denver. The postgraduate course will be held in Vail, Colorado.

Oct. 22 *CDC Symposium on Nutrition*.





#### HARVEY L. BOGAN, M.D.

Dr. Harvey L. Bogan, 60, Baxter Springs, died at St. Luke's Hospital, Kansas City, on June 4, 1971.

Dr. Bogan was born in Derby, Kansas, on December 13, 1960. He was graduated from the University of Kansas School of Medicine in 1942 and had lived in Baxter Springs since 1943. He was active in the preinternship training program of the University of Kansas medical school, and had served on the Kansas Board of Health and the State Board of Registration and Examination for Doctors. He was a member of a number of medical and civic organizations.

Survivors include his wife, a son and two daughters.

Memorial contributions may be made to the Harvey L. Bogan Memorial Fund, University of Kansas Endowment Association, University of Kansas Medical Center.

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#### JAMES L. SALOMON, M.D.

Dr. James L. Salomon, Wichita, died on May 22, 1971, at the age of 51.

Dr. Salomon was born at Princeton, Indiana, on January 25, 1920. He received his medical degree from Northwestern University School of Medicine in 1944. He moved to Wichita from Chicago in 1959 and was head of the medical department of the Wichita division of the Boeing Company.

Surviving Dr. Salomon are his wife, a son and a daughter.

Memorials have been established with the Sedgwick County Heart Association and Quivira Boy Scout Council.

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#### RALPH Y. STROHM, M.D.

Dr. Ralph Strohm, 75, died at a Fort Scott hospital on June 4, 1971.

He was born at Brooks, Kansas, on January 29, 1896. He moved to Fort Scott in 1927, after receiving his medical degree from Northwestern University School of Medicine. Dr. Strohm retired from private practice in 1969 due to ill health.

Dr. Strohm is survived by his wife and daughter.

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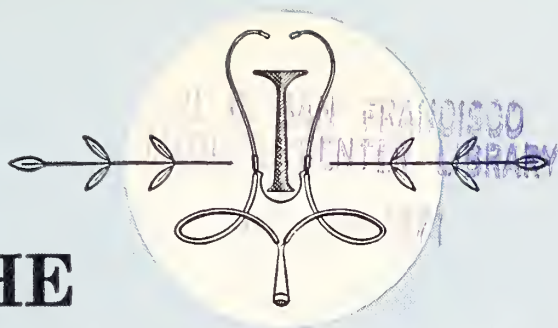
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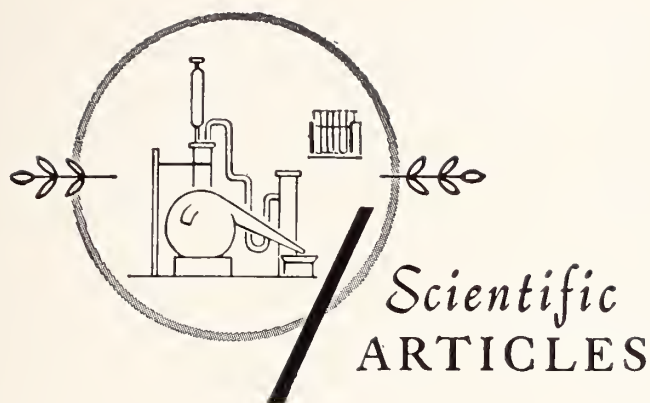
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# A Case Study—

## —Phenothiazine Induced Cardiac Arrhythmia

JIM D. DIXON, M.D.,\* RALPH BUBECK, M.D.,  
ROGER CUNNINGHAM, M.D., and A. D. GULLEDGE, M.D., *Wichita, Kansas*

### Introduction

THE YEAR 1954 marked an important milestone in the history of medicine, for with the introduction of the major tranquilizers the entire character and modus operandi of psychiatry entered upon a new era. Patients were literally unshackled; hospital stays were drastically shortened; and patients who were once hopelessly lost to society could return to useful life.

The phenothiazines and related drugs (i.e. the dibenzazepine compounds), however, have not proved to be a panacea for psychiatry. Shortly after the phenothiazines came into widespread use, reports of sudden unexplained deaths among patients in psychiatric hospitals and wards began to appear in the literature, thus raising the question as to whether there could be a connection between these deaths and the use of the major tranquilizers. Some have stated their impression that there has been in fact no increase in the number of sudden deaths among psychiatric patients since the advent of the major tranquilizers,<sup>1</sup> but the majority of opinion definitely favors the idea that there has been some positive correlation between the use of this class of drugs and sudden death.<sup>2, 3</sup> Very few successful resuscitations among this group of patients has been reported in the literature; therefore, presentation of this case seems most appropriate.

### Case Presentation

This 37-year-old female has had a diagnosis of chronic schizophrenia since 1961. At that time she suffered a schizophrenic break and subsequently was

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**Presented here is the report of a 37-year-old female with schizophrenia who was treated with massive doses of phenothiazines and subsequently had a cardiac arrest. Post-resuscitation, she developed life-threatening cardiac arrhythmias which were successfully treated with propranolol.**

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hospitalized for psychiatric treatment on three different occasions. She had no history of serious medical illnesses, and there is no history of heart disease in the family.

In early September 1970, this lady was hospitalized at another Wichita hospital with an acute schizophrenic break and was started on chlorpromazine and fluphenazine. Dosage was gradually increased in an effort to control symptoms until she was receiving 3,300 milligrams chlorpromazine and 30 milligrams fluphenazine daily in divided doses. After twelve days it was apparent that the patient could not be controlled on even these amounts, so she

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\*Currently Resident in Internal Medicine, University of Oklahoma Medical Center, Oklahoma City, Oklahoma.

was transferred to St. Francis Hospital for electroconvulsive therapy.

While continuing on high dose phenothiazine, the patient received electroconvulsive therapy on six different occasions. Early on the morning of the sixth hospital day, the patient was noted by the nurses to have undergone a seizure-like episode and then to be pulseless and apneic. Very shortly, however, with only mouth to mouth resuscitation she became responsive. Approximately five minutes later, while two physicians were in attendance, she once again suffered cardiopulmonary arrest.

Resuscitative measures were instituted immediately and, after 30 minutes of vigorous activity, which included an intracardiac injection of 0.2 cubic centimeter isoproterenol, they were successful in reviving the patient. Following this episode, the patient did well and was transferred to the intensive care unit. An electrocardiogram taken shortly thereafter was unremarkable except for a markedly prolonged QT interval.\*

By midmorning, however, the patient was becoming quite restless and was sedated with intermittent injections of Valium 10 milligrams intravenously. In early afternoon the patient became cyanotic and began to experience runs of rapid ventricular tachycardia. Once again resuscitation was required; a cuffed endotracheal tube was placed, and a volume controlled respirator was applied. Throughout the afternoon she continued to have long runs of rapid ventricular tachycardia in spite of continuous infusion of lidocaine. External cardiac massage and DC defibrillation were applied repeatedly but were unsuccessful in maintaining a stable rhythm.

Late in the afternoon intravenous propranolol in boluses of 1 milligram were given and were successful in controlling the arrhythmia. The propranolol was given at about 5 minute intervals in amounts sufficient to suppress the arrhythmia (usually 5-6 milligram total). While the lidocaine infusion was continued, this procedure was repeated four times during the next 24 hours.

The following evening a continuous intravenous infusion of propranolol at a rate of 1 milligram per hour was started. The lidocaine drip was also continued for one more day and then stopped. The propranolol drip was continued for another seven days

before we felt safe in discontinuing it. During this interval the patient had only one long run of ventricular tachycardia in which DC defibrillation was used. The sequence of electrocardiograms showed the progress that was made in suppressing the arrhythmia. Certain of these electrocardiograms showed prominent U waves suggestive of hypokalemia. Numerous electrolyte studies during the course of the illness, however, were not far from the normal range. The lowest serum potassium measured was 3.0 milligram per 100 milliliter, and that was on the afternoon the cardiac arrest originally occurred. The serum calcium was also found to be abnormal with a value of 6.6 milligram per 100 milliliter two days after the arrest occurred. Both the potassium and calcium were supplemented through the intravenous infusions. It is regrettable that serum levels of phenothiazines and calcium were not initially measured. Daily measures of phenothiazine were determined starting on the third day following arrest and continuing for four days. No valid phenothiazine levels were detected. Also, on the fourth day following arrest, a six hour urine for catecholamines was determined with a value of 14 microgram per 6 hours. (normal 0-100 microgram per hour).

Numerous complications developed during the post-resuscitation period. These included a left sided pneumothorax, which required placement of a chest tube, pneumonia of the lingula, flail chest which required a tracheostomy and a return to positive pressure breathing, and a urinary tract infection. She was treated with ampicillin and gentamycin.

Gradually, however, these complications were controlled as was her cardiac arrhythmia, and she was discharged from the hospital on no medications. Interestingly enough, her psychiatric problems at discharge seemed to be greatly improved. Three weeks later, however, she was admitted to the state mental hospital with symptoms very much like those present before her ordeal began.

## Discussion

A common thread runs through many of the reported cases of sudden death among patients receiving large doses of phenothiazines. The typical example is that of a young patient who is without significant medical problems but who is extremely difficult to manage psychiatrically. In the end these patients are maintained on relatively large amounts of the psychotropic drugs. The patient's terminal event frequently is initiated by an episode of syncope, followed by seizure and the absence of spontaneous respiration or heart beat.<sup>2-4</sup> Only a few reported cases of successful resuscitation have appeared in the literature.<sup>5</sup>

Among the more likely possibilities which have been advanced to explain these and other sudden

\* The three electrocardiograms referred to in this paper are available to anyone who is interested in receiving them. The electrocardiograms taken illustrate (1) the prolonged QT intervals and U waves shortly after cardiac resuscitation; (2) irritable myocardium with runs of rapid ventricular tachycardia, on the afternoon of resuscitation; and (3) normal electrocardiogram taken shortly before discharge from hospital (16 days post-resuscitation). For copies, write Jim D. Dixon, M.D., Department of Medicine, University of Oklahoma Medical Center, 800 N.E. 13th Street, Oklahoma City, Oklahoma 73104.



unexplained deaths have been two: (1) asphyxia due to aspiration of vomitus during a seizure or food while eating (at times documented by finding aspirate in the tracheo-bronchial tree at autopsy); and (2) cardiac arrhythmia with terminal cardiac arrest.<sup>3</sup> Since the former possibility can be documented at the hands of the prosector, attention has naturally been focused on the latter.

For many years the electrocardiographic effects of the phenothiazines, especially thioridazine, have been recognized.<sup>4, 7, 8</sup> Thioridazine and chlorpromazine can both produce prolongation of the P-Q and Q-T intervals, numerous T wave changes including rounding, flattening, inversion, broadening, and splitting, ST segment depression, and various arrhythmias including ventricular and supraventricular tachycardia, bigeminal rhythm, atrial and ventricular premature contractions, ventricular fibrillation, and varying degrees of heart block. Many of these changes might go simply under the classification of "non-specific ST-T wave changes." These changes have been likened to a quinidine-like effect, hypocalcemic effect, or even more to a situation resembling hypokalemia. Studies have appeared in which this parameter was carefully measured, and the serum electrolytes were found to be within normal limits.<sup>8</sup> The prolonged QT or QU interval often seen in these patients represents an increase in the duration of the vulnerable period and hence greater likelihood of developing arrhythmias. Therefore, premature ventricular beats may precipitate runs of ventricular tachycardia or even fibrillation.

If we are left, then, with cardiac arrhythmia as a cause of death in these phenothiazine treated patients, what is the mechanism producing this situation? Studies have indicated that in patients on therapeutic doses of chlorpromazine serum norepinephrine levels are frequently quite high. Indeed, serum levels as high as 7 micograms per liter with comparably high urine levels have been reported.<sup>11</sup> One possible mechanism for these high norepinephrine levels might be explained on the basis of competitive binding of the chlorpromazine and norepinephrine for the tissue binding sites.<sup>9-11</sup> Studies have shown that phenothiazines and related compounds may alter the norepinephrine content of mouse myocardium.<sup>12</sup>

Some have suggested that a realignment of the autonomic balance with a shift toward adrenergic dominance is a likely explanation for the electrocardiographic changes induced by the phenothiazines.<sup>13</sup> Surely the frequent instances of hypotension associated with the use of the phenothiazines are not explained by this suggested adrenergic dominance. True myocardial damage possibly induced by this class of drugs is mentioned only rarely in the literature.<sup>14</sup> Some do suggest that these drugs in fact may

produce a toxic cardiomyopathy manifested by these abnormal electrocardiographic changes.

It is also of interest to note the studies which have revealed acid mucopolysaccharide deposits in the myocardium of some patients on phenothiazines who died suddenly. It has been postulated that l-epinephrine and l-norepinephrine might be contributing factors to the development of these lesions and, therefore, that the adrenergic blocking effect of the psychotropic drugs might play a role.<sup>15</sup> Small artery disease is certainly a possibility in light of these postmortem findings.

Electron microscopic examinations of the myocardium of three phenothiazine treated patients who died unexpectedly showed nonspecific mitochondrial damage and myofibril degeneration. These changes conceivably could have been secondary to the phenothiazines.<sup>17</sup>

One other possible explanation for the electrocardiographic abnormalities induced by the phenothiazines concerns the possible inhibition of the sodium, potassium dependent adenosine triphosphatase (ATPase) enzyme system. Magnesium, the metal necessary for the activation of the sodium, potassium dependent ATPase system, has been found to be chelated to some extent by the phenothiazines. Studies have indicated that patients receiving thioridazine excrete increased amounts of sodium and magnesium in the urine.<sup>3, 16</sup>

Although numerous theories have appeared to help explain the mechanism of phenothiazine induced cardiac arrhythmias, little has appeared in the literature in terms of therapy for the cardiotoxicity of the phenothiazines. A preliminary report indicated that certain cardiac irregularities associated with the use of imipramine in children can be controlled with propranolol.<sup>18</sup> Reports from Jerusalem indicate that apparent phenothiazine induced tachycardia can be effectively reduced to a normal rate with oral propranolol.<sup>19</sup> Of the above mentioned possible mechanisms for the electrocardiographic changes induced by the phenothiazines, excessive catecholamines titers would be the one most likely to respond to propranolol therapy. We could not find a previous case in the literature in which intervenous propranolol has been used effectively to restore normal cardiac rhythm in a patient whose arrhythmia was phenothiazine induced and almost immediately fatal. This therapy we feel has theoretical benefit and at least, in this one case, therapeutic value in treating phenothiazine induced ventricular arrhythmias and deserves further evaluation.

## References

1. Hussar, Allen: Effect of tranquilizers on medical morbidity and mortality in a mental hospital. *J.A.M.A.* 179: 682-686, 1962.

(Continued on page 353)

# The Law and the Practice

## *Physician Attitudes on Abortion and the Kansas Abortion Law*

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ON JULY 1, 1970, a new abortion law took effect in Kansas which is liberal, quite general, and permits a great deal of interpretation from the physician. For this reason, a survey was made to examine doctors' attitudes toward the new law and abortion in general. The specific criteria by which a doctor would perform an abortion were also examined.

For the reader unacquainted with the Kansas law, it reads as follows:

### KANSAS ABORTION LAW

This Abortion Law of Kansas was enacted in 1969. 1969 Session Laws of Kansas, page 585

An Act relating to the performance and furnishing of hospital and medical or surgical treatment or procedures upon minors and concerning the giving of consent therefor.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF KANSAS.

Section 1. Notwithstanding any other provision of the law, any minor sixteen (16) years of age or over, where no parent or guardian is immediately available, may give consent to the performance and furnishing of hospital, medical or surgical treatment or procedures, and such consent shall not be subject to disaffirmance because of minority. The consent of a parent or guardian of such a minor shall not be necessary in order to authorize the proposed hospital, medical or surgical treatment or procedures.

Section 2. This act shall take effect and be in force from and after its publication in the statute book. Approved April 18, 1969.

Assisting suicide is a class E felony.

Sec. 21-3407. Criminal abortion. (1) Criminal abortion is the purposeful and unjustifiable termination of the pregnancy of any female other than by a live birth.

(2) A person licensed to practice medicine and surgery is justified in terminating a pregnancy if he believes there is a substantial risk that a con-

tinuance of the pregnancy would impair the physical or mental health of the mother or that the child would be born with physical or mental defect, or that the pregnancy resulted from rape, incest, or other felonious intercourse; and either:

(a) Three persons licensed to practice medicine and surgery, one of whom may be the person performing the abortion, have certified in writing their belief in the justifying circumstances, and have filed such certificate prior to the abortion in the hospital licensed by the state board of health and accredited by the joint commission on accreditation of hospitals where it is to be performed, or in such other place as may be designated by law; or

(b) An emergency exists which requires that such abortion be performed immediately in order to preserve the life of the mother.

(3) For the purpose of this section pregnancy means that condition of a female from the date of conception to the birth of her child.

(4) For the purpose of subsection (2) of this section all illicit intercourse with a female under the age of sixteen (16) years shall be deemed felonious.

(5) Criminal abortion is a class D felony.

No hospital or physician need carry out the above act if it is against his conscience.

The survey was limited to the physicians of Johnson and Wyandotte County Medical Societies. The doctors interviewed were selected by a random sampling of the 1970 roster of members of both societies. Of a total of 212 physicians, 80 were selected. The doctors were interviewed personally by using a standard interview form (*Table 1*). At each of the interviews, the questions were asked of the physician and the responses were recorded by the interviewer. The physician was also provided with a copy of the new law, if he desired it, before the interview began. In addition to the questions in the survey form, the respondents' age, sex, specialty, type of practice, marital status, number of children, and religion were recorded.

The overall results of the survey are listed in *Table 2*. A large majority (91%) of doctors agreed with

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TABLE 1  
INTERVIEW SHEET  
ABORTION ATTITUDES STUDY

INTERVIEW NUMBER ..... URBAN OR RURAL PRACTICE .....  
 AGE ..... MARITAL STATUS .....  
 SEX ..... NUMBER OF CHILDREN .....  
 SPECIALTY ..... RELIGION .....  
 QUESTIONS:

<i>Yes</i>	<i>No</i>	<i>No Opinion</i>	<i>Other Responses</i>
			<ol style="list-style-type: none"> <li>1. Are you familiar with the new Kansas abortion law which takes effect in July of this year?</li> <li>2. The new Kansas abortion law requires approval by a board of doctors before an abortion can be performed. Do you agree with this requirement?</li> <li>3. Do you agree with the hospitalization requirement in the new law?</li> <li>4. Do you think all specific legal restrictions on abortions should be dropped so that abortions could be performed following only professional judgment?</li> <li>5. Do you consider the new Kansas abortion law adequate to deal with the problem of unwanted children in Kansas?</li> <li>6. Are there any specific criticisms of the law that you would make?               <ol style="list-style-type: none"> <li>a. Do you consider the new law too permissive?</li> <li>b. Do you consider the new law too restrictive?</li> </ol> </li> <li>7. Do you believe that there are conditions under which an abortion is desirable?</li> <li>8. What criteria under the new law do you consider sufficient to warrant an abortion?               <ol style="list-style-type: none"> <li>a. Mother doesn't want child.</li> <li>b. Endanger the mental health of the mother.</li> <li>c. Endanger the physical health of the mother.</li> <li>d. Financial reasons such as unwillingness to support a child.</li> <li>e. Financial reasons such as inability to support a child.</li> <li>f. Possibility of birth defects.</li> <li>g. Rape.</li> <li>h. Incest.</li> <li>i. Unwed mother.</li> <li>j. Population control.</li> </ol> </li> <li>k. Do you have any specific criteria which you consider sufficient to warrant an abortion that I have failed to mention?</li> <li>9. Would you perform an abortion yourself?</li> </ol>
			FOR NO ANSWERS TO NO. 9
			<ol style="list-style-type: none"> <li>10. Would you refer a patient to another doctor for an abortion?</li> <li>11. What specialty skills do you consider necessary for a doctor to perform an abortion?</li> </ol>

TABLE 2  
TOTAL SURVEY POPULATION—80 DOCTORS

	% Yes	% No	% Other Responses
1. Are you familiar with the new Kansas law? . . . . .	78	22	0
2. Do you agree with the consulting doctors requirement? . .	66	24	10
3. Do you agree with hospitalization requirement? . . . . .	66	23	11
4. Do you think that all legal restrictions should be dropped? . . . . .	49	42	9
5. Do you consider the new law adequate? . . . . .	49	40	11
6. a. Do you consider the new law too permissive? . . . . .	22	78	0
b. Do you consider the new law too restrictive? . . . . .	32	68	0
7. Do you believe that there are conditions under which an abortion is desirable? . . . . .	91	9	0
8. Criteria for abortion: Is it sufficient? . . . . .			
a. Mother doesn't want the child . . . . .	50	39	11
b. Endanger the mental health of the mother . . . . .	80	19	1
c. Endanger the physical health of the mother . . . . .	89	11	0
d. Financial reasons—unwillingness . . . . .	51	39	10
e. Financial reasons—inability . . . . .	53	36	11
f. Possibility of birth defects . . . . .	91	9	0
g. Rape . . . . .	91	9	0
h. Incest . . . . .	91	9	0
i. Unwed mother . . . . .	58	43	0
j. Population control . . . . .	35	65	0
9. Would you perform an abortion yourself? . . . . .	35	65	0
10. Would you refer a patient to another doctor for an abortion? . . . . .	86	14	0

the principle of abortion. Most were familiar with the law and almost two thirds agreed with its major requirements. Almost half of the doctors felt that the new law is adequate to take care of the unwanted pregnancies in Kansas even though half (49%) also felt that all legal restrictions should be dropped (making an abortion a doctor-patient affair exclusively).

The most widely accepted criteria for abortion were rape, incest, the possibility of birth defects, and the impairment of the physical and mental health of the mother. The socially based reasons for abortions such as financial reasons, unwed mother, and the unwanted pregnancy were less acceptables. Population control was the least acceptable reason for abortion with only 35 per cent of the respondents agreeing to that principle.

Thirty-five per cent of the respondents would perform an abortion themselves and of those who would not perform an abortion themselves, 86 per cent would refer a patient to another doctor for an abortion. This data infers that in these two counties, a woman's chance is nine to one in favor of finding a doctor on the first try who will either perform an abortion or will refer her to another doctor who will.

Table 3 presents the survey population divided into specialty groups. Seventy per cent of the obstetricians reported they would perform an abortion. Of those obstetricians who would not perform an abortion, 71 per cent said they would refer a patient to another doctor. They were also fairly liberal in their criteria for an abortion with 43 per cent in favor of abortion for population control. The obstetricians are obviously an important group because women are most likely to go to them for an abortion. Another important group in the abortion problem is psychiatrists, as they are likely to be used as consulting physicians. The psychiatrists were the most liberal group with 100 per cent agreeing with the principle of abortion, and 64 per cent believed in abortion on request. Seventeen per cent of the general practitioners were opposed to the principle of abortion; however, 35 per cent reported they would perform an abortion, and 53 per cent felt that the new law is too restrictive.

Table 4 shows clearly that religion has a great affect on attitudes toward abortion. In general, Catholics were much more conservative in their views on abortions than any other religious group. Forty-six per cent of all Catholics opposed abortions for any reason whatsoever as compared to only 2 per cent





TABLE 4  
RELIGION—TOTAL—80

	Protestant 59-74%			Catholic 11-14%			Jewish 3-3%		No Affiliation 7-9%			
	%	%	%	%	%	%	%	%	%	%	%	%
	YES	NO	O.R.	YES	NO	O.R.	YES	NO	O.R.	YES	NO	O.R.
1. Are you familiar with the new Kansas law? .....	76	24	0	82	18	0	33	67	0	100	0	0
2. Do you agree with the consulting doctor's requirement? .....	78	21	1	36	18	46	33	33	33	29	57	14
3. Do you agree with the hospitalization requirement? .....	73	23	4	54	0	46	33	67	0	43	43	14
4. Do you think that all legal restrictions should be dropped? .....	54	45	1	18	36	46	67	33	0	43	43	14
5. Do you consider the new law adequate? .....	57	39	4	8	46	46	67	33	0	43	43	14
6. a. Do you consider the new law too permissive? .....	17	83	0	54	46	0	33	67	0	14	86	0
7. Do you believe that there are conditions under which an abortion is desirable? .....	98	2	0	54	46	0	100	0	0	86	14	0
8. Criteria for abortion: Is it sufficient?												
a. Mother doesn't want the child ..	51	37	12	27	65	8	67	0	33	71	29	0
b. Endanger the mental health of mother .....	31	69	0	35	65	0	67	33	0	71	29	0
c. Endanger the physical health of mother .....	100	0	0	35	65	0	67	33	0	86	14	0
d. Financial reasons—unwillingness	53	37	10	27	65	8	100	0	0	57	29	14
e. Financial reasons—inability ....	54	34	12	27	65	8	100	0	0	57	29	14
f. Possibility of birth defects .....	98	2	0	54	46	0	100	0	0	86	14	0
g. Rape .....	98	2	0	54	46	0	100	0	0	86	14	0
h. Incest .....	98	2	0	54	46	0	100	0	0	86	14	0
i. Unwed mother .....	63	37	0	18	82	0	67	33	0	71	29	0
j. Population control .....	41	58	1	0	100	0	33	67	0	29	71	0
9. Would you perform an abortion yourself? .....	46	54	0	0	100	0	0	100	0	14	86	0
10. Would you prefer a patient to another doctor for an abortion? .....	100	0	0	54	46	0	100	0	0	67	33	0

Protestants. No Catholic physician would refer a patient to another doctor for an abortion. No Catholic doctor approved of abortion for population control while 41 per cent of Protestants, 33 per cent of Jewish physicians, and 29 per cent of those with no religious affiliation said they would perform an abortion for population control.

Age is also an influential factor in determining opinions on abortion as shown in Table 5. The 45 years and under age groups were somewhat more liberal in their abortion attitudes than the over 45 age group. Ninety-five per cent of the younger group believed in the principle of abortion as compared with 87 per cent of the older group. Only 10 per cent of the younger group felt that the new law is

too permissive as compared to 35 per cent of the older group. An interesting contrast was that 53 per cent of the 45 and under group believed in performing abortions for population control, while only 15 per cent of the over 45 group believed that population control was a legitimate reason. The factors of marital status, number of children and sex were also examined, but there was no significant difference to be drawn from the data.

A major conclusion to be drawn from this survey is that abortions will be apparently easy to obtain under the new law. Since 91 per cent of all doctors approve of the principle of abortion and will either perform one or will refer a patient to another doctor, the chances are extremely good of finding a doc-



TABLE 5  
AGE—TOTAL—80

	45 and Under—40-50%			Over 45—40-50%		
	% YES	% NO	% O.R.	% YES	% NO	% O.R.
1. Are you familiar with the new Kansas law? . . .	85	15	0	70	30	0
2. Do you agree with the consulting doctor's requirement? . . . . .	63	30	7	70	18	12
3. Do you agree with the hospitalization requirement? . . . . .	65	25	10	68	20	12
4. Do you think that all legal restrictions should be dropped? . . . . .	58	37	5	40	48	12
5. Do you consider the new law adequate? . . . . .	58	37	5	40	43	17
6. a. Do you consider the new law too permissive?	10	90	0	35	65	0
b. Do you consider the new law too restrictive?	40	60	0	25	75	0
7. Do you believe that there are conditions under which an abortion is desirable? . . . . .	95	5	0	87	13	0
8. Criteria for abortion: Is it sufficient?						
a. Mother doesn't want the child . . . . .	60	30	10	40	48	12
b. Endanger the mental health of mother . . . . .	93	7	0	68	30	2
c. Endanger the physical health of mother . . . . .	95	5	0	83	17	0
d. Financial reasons—unwillingness . . . . .	58	30	12	45	48	7
e. Financial reasons—inability . . . . .	55	40	15	50	43	7
f. Possibility of birth defects . . . . .	95	5	0	88	12	0
g. Rape . . . . .	95	5	0	88	12	0
h. Incest . . . . .	95	5	0	88	12	0
i. Unwed mother . . . . .	75	25	0	40	50	10
j. Population control . . . . .	53	47	0	15	83	2
9. Would you perform an abortion yourself? . . . . .	33	67	0	38	62	0
10. Would you refer a patient to another doctor for an abortion? . . . . .	100	0	0	73	27	0

tor who will perform an abortion. Emphasizing this point is the fact that 71 per cent of obstetricians would perform an abortion, and in fact, 45 per cent agreed with most any legitimate reason for the procedure. This is particularly important, as obstetricians are the physicians most likely to receive requests for them. The groups most likely to be used as consultants, the psychiatrists and the general practitioners, are even more in favor of abortions for liberal reasons, since 64 and 57 per cent respectively believe in abortions on request (mother doesn't want the child). Although the new law does not allow for abortions under such liberal social reasons, it does allow for abortions when there is danger of impairing the mental health of the mother. A liberal interpretation of this provision by the doctors could easily lead to abortions for any social reason because of the risk from social pressures to the mental health of the mother.

The most obvious conclusion to be drawn from the survey would be that physicians approve more of medical reasons for abortion than of social reasons. The least approved medical reason for abortion

(threat to the mental health of the mother) got 80 per cent approval from all the doctors, while the most approved social reason (unwed mother) got only 58 per cent approval. However, a majority of doctors still approved of doing abortions even for social reasons.

The results of the survey also showed that the new Kansas law is a good compromise. Almost half of the physicians felt that its provisions were adequate to deal with the problem of unwanted pregnancies in Kansas. The groups that disagreed with the law were almost equal in size. Twenty-two per cent felt that it was too permissive and 32 per cent felt that it was too restrictive.

This survey was limited to two counties in the metropolitan area. The views expressed in this survey were not necessarily a reflection of views across the entire state.

As the survey indicates that the majority of doctors surveyed approve of the new liberalized Kansas abortion law, it appears that women in Kansas will have abortions available to them for both medical and social reasons.

# The Physician's Assistant

## —With Emphasis on a Local Program for Training Pediatric Nurse Associates

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A NEW PROFESSIONAL has emerged and is taking his place as a necessary member of the health team. His status is between that of the nurse and the physician he works with. His title is "Physician's Assistant." The physician's assistant has evolved to meet the need of increasing the amount of health care available to a growing population. The highly trained physician is now being relieved of "routine care" and well-patient care to better allow him to see more of the truly ill patients which require his expertise, while the assistant spends more time with the well patient, thereby increasing the quality of care to all.

The versatility of the physician's assistant is exemplified by the many authors that have written about their own training programs which relieve a need in their particular area. One group used an ex-medic trained in Duke University. After they had analyzed their practice of internal medicine it was found that well over half of their patients came for reassurance or routine checking of symptoms, and only a small fraction of the time was there a justifiable demand on the skill that they had acquired in their many years of training and practice.<sup>1</sup>

In Chicago, the Head Start programs are utilizing trained nurse pediatric assistants rather than busy physicians for screening programs.<sup>2</sup> In rural areas, the trend is to set up regional clinics. These attract specialists, who because of their speciality responsibilities are unable to carry on a lot of the routine care previously acceptable to general practitioners. This need for routine care is being met by the physician's assistants.<sup>3</sup> The federal government has even created new job classifications for these physician's assistants in their civil service categories.<sup>4</sup>

The concept of the physician's assistant is not new. The innovation is its application to the pediatrician's, family practitioner's, and internist's office. Laboratory technicians, surgical technicians, inhalation therapists, physiotherapists, x-ray technicians, and ophthalmologists assistants are all trained medical personnel who carry out routine or specialized tasks which were at one time performed by the physician himself.<sup>3</sup> While physician's assistants have been utilized by physicians for a long time, most have been trained on the job by the individual physician. The nursing profession has been the main source of

such manpower. Yet, the nurse's primary training is oriented to serving the patient in such a way as to enhance his comfort, speed his recovery and enable him to live with his limitations. The nurse's ability to serve as a highly skilled and effective assistant requires additional training by the physician.<sup>5</sup>

In an effort to speed up the training process to help expand the amount of health manpower, the American Medical Association Department of Health Manpower has set up guidelines for the development of new health occupations. The need for these guidelines is realized when we consider that in August 1970, there were twenty programs in operation or in the planning stages for training assistants. Length of training varies from eight weeks to five years. Educational settings, prerequisites for admission, and credentials awarded all vary tremendously and accentuate the need for medicine to develop overall standards and curricula which can be applied to all of the programs, so as to insure orderly, well planned development.<sup>6</sup>

Programs to train physician's assistants have developed from the needs documented by many reports, especially that of the National Center of Health Statistics of 1965 and 1967. One purpose of these programs is to give job descriptions so that we are not substituting for, or competing with, those professions or occupations already in existence.<sup>5</sup>

Currently, there are basically three types of Physician's Assistant training programs. Type A, the Child Health Associate, is the most highly trained, requiring from two to five years. This is exemplified by the University of Colorado Medical Center Program requiring two years pre-medical undergraduate work, one year basic science and one year clinical experience at the University Medical Center, followed by one year internship. The Child Health Associate is then capable of collecting historical and physical data, presenting to the physician patients with abnormal findings, and handling routine patient care on his own. He might under special circumstances perform without immediate surveillance of the physician. A practical application of these assistants would be in some pediatric public health nurse positions, which are at this time being manned by a regular registered nurse who is visited once a week



by the physician assigned to the area.<sup>7-10</sup> Type *B*, the "Assistant Specialist" is a variable length program and trains an assistant with a less broad range than type *A*. No preliminary formal training is usually necessary. His specialty training may exceed that of the average physician. Typical of these would be persons highly skilled in physicians' functions associated with operating a renal dialysis unit.<sup>8, 9</sup>

Type *C* resembles type *A* by his capability of performing a number of tasks over the whole range of medical care, but unlike type *A* he is not equipped to interpret and integrate the clinical findings and would require closer supervision. His training would require several months and would be exemplified by the program now being worked out by Duke University, or by the Health, Education and Welfare and Department of Defense program for training ex-medics.<sup>5, 9, 11, 12</sup>

Another concern in the physician's assistant program is that of licensure. Those who favor licensure say that this insures the stability of a position so that the trainees will not suddenly find themselves out of a job because a new state law would prohibit them from practicing.<sup>13</sup> Physicians too seek licensure of the candidates to protect themselves against malpractice liability.

Most persons involved in training programs are against licensure because they feel it would limit the amount of responsibility a physician's assistant could accept and therefore limit his usefulness. A study group at Duke University felt that licensure would "straitjacket" the assistant rather than allow him to be "custom-tailored" to the requirements of his future employer. Furthermore, they felt licensure was for professionals who function independently and not for those who work primarily under supervision.<sup>14</sup> The American Hospital Association Board of Trustees feels that licensure limits job opportunities, removes an employer's means of using manpower in flexible arrangements and affects the patient in increased cost.<sup>15</sup>

California has decided to license their physician's assistants through the California Board of Medical Examiners, with a law attempting to steer a middle ground between too restrictive specific licensing and too loosely structured general licensing.<sup>1</sup> Statutes in Arizona, Colorado, Oklahoma and Kansas are cited as specifically allowing physicians to use assistants as long as they are personally supervised by a physician, "who takes full responsibility for their actions."<sup>8</sup> The Duke group does feel that changes in other state laws are necessary to protect physician assistants from charges of practicing medicine without a license and also to protect the physicians, hospitals, or other agencies that employ them.<sup>14</sup>

Patient acceptance of someone else carrying out

primary contact rather than the physician is of concern, even though the assistant could give the patient more time and cost them less.<sup>16</sup> Acceptance of the physician's assistant by both physician and patient has been exceptionally good.<sup>2, 3, 17, 18</sup> Some, including some physicians, seem to fear that delegation will bring about second-rate medicine. However, as long as the physician remains in charge and accepts the responsibility, while the assistant reports to him, it is felt by many that the patient will get superior rather than inferior care.

The area of pediatrics is well suited for the utilization of pediatric assistants. The evidence of the impending shortage of pediatric manpower is well documented.<sup>19</sup> The problem is compounded by the varying degrees of discontent and disillusionment among some pediatricians whose excessive patient load fails to provide them with a stimulating intellectual challenge. The activities of the pediatrician include many functions that could be provided as well, and perhaps better, by other health care personnel. Studies have shown that from 50 per cent to 65 per cent of the patients seen by pediatricians are well.<sup>20</sup> They are brought to him to receive immunizations, general care and feeding advice, for reassurance of the mother and a physical examination to check growth and development. This care is necessary as a means of finding early disease processes and preventing mismanagement of infants, but it can be given as well by a well-trained assistant who realizes his limitation and knows when to consult the physician.

Because the need for pediatric assistants has been expressed across the United States as well as locally, and because one of the biggest programs in training pediatric assistants is in our neighboring state of Colorado, it was essential that a local training program be developed for training pediatric assistants to increase the supply of pediatric services in our immediate area. Training people from a wide range of backgrounds was originally envisioned for the new local program. Due to the confusion concerning licensure at present, the program will initially be limited to training registered nurse pediatric associates; these pediatric nurse associates may perform in their new role under their present nursing licensure.

The emphasis of this program will be to train nurses to do well-child care. The physician setting up the program was in private practice for many years as a pediatrician. On recent analysis of his practice, he found that approximately 65 per cent of his patient load were children essentially in good health. Yet, he was forced because of this load of patients, to treat many ill children over the telephone without seeing them. The main objective of this program is to direct the well-child care to a well trained

associate and better allocate the physician's time to treating the ill patients and utilizing the specialty training which the pediatrician has received.

More specifically, the objectives of the local Pediatric Associate training program are:

1. To train personnel with adequate educational background and potential ability to assist the Pediatrician in:
  - a. Alleviating the crush of the population explosion in the care of well children.
  - b. Extending care to encompass more of the community's underprivileged.
  - c. Participating in the delivery of well-child care as members of the health care team.
2. To utilize medical and nursing talent that is now dormant.
3. To deliver more pediatric care without sacrificing quality.

The training program is scheduled for an enrollment of six registered nurses for the first year. The requirements for admission are an AB or BS degree from an approved school and basic medical or paramedical training. Eventually, it is hoped that the program may be expanded to allow training of licensed practical nurses, ex-medics and others.

The 48-week educational program is set up in the following quarters:

1. Evaluation of the normal child from conception through adolescence.
  - a. 180 Hours of didactic lectures including: embryology, anatomy, physiology, endocrinology, lab procedures and normal lab values, emotional and social development, child psychiatry.
  - b. 180 Hours of practical experience and elective clinics stressing:
    - (1) Physical examination of newborn, preschool and school age normal children.
    - (2) Technique of taking medical and developmental histories
    - (3) Nutrition
    - (4) Environmental relationships to family, playmates and school
    - (5) Medical nomenclature
    - (6) Routine immunization and vision and hearing testing
    - (7) Dental health
    - (8) Medical ethics
2. Well Child Clinics
  - a. All clinical practical experience to learn:
    - (1) Medical, family and social history taking
    - (2) Developmental screening
    - (3) Family care and counseling in the areas of child rearing, feeding and normal growth and development
    - (4) Social service experience
3. Recognition of abnormal states in children
  - a. 180 Hours of didactic lectures on:
    - (1) Common illnesses (URI, Otitis Media, Diarrhea, Vomiting, Genitourinary)

- (2) First aid
- (3) Surgical problems, orthopedic problems, etc.
- b. 180 Hours of practical experience and specialty clinics in:
  - (1) Recognition of the abnormal state
  - (2) Experience in emergency room and ambulatory clinics
  - (3) Role in office practice
4. Preceptorship in a private practicing pediatrician's office.

Upon graduation they will be certified and placed in area clinics, hospitals, pediatricians' offices, public health offices, public schools, family health teams, or retained as instructors. The annual salary anticipated for these pediatric associates will range from \$8,400 to \$12,000.

Kansas will be greatly benefited by this local source of trained pediatric associates. Public health nurses, school nurses and pediatric office nurses often are individuals without special training in pediatrics and their positions might better be filled by more highly trained pediatric associates. Kansas is in the process of setting up regional health clinics in the rural areas. These will attract the more highly trained pediatrician who, because of his specialty requirements will have less time to spend with well patients, but his pediatric associate will take the time to counsel parents and carry on routine immunization, etc. The pediatricians currently in practice can utilize these assistants to relieve their great patient load and allow them more time for study and keeping up on current literature. The patients will benefit by cutting down on telephone therapy of ill patients and, since their well patients are handled by the pediatric associates, the pediatricians will have time to see more of the sick children.

The physician's assistant is here to stay. He is the logical answer to the increasing need for better medical care for an ever increasing population. The assistance that he renders in taking over routine medical tasks will give the overburdened physician more time to deal with the truly ill patient, and more time for self improvement and thereby increase the quality of care to all.

## References

1. Andrus, L. H.: Clearing the way for more paramedical help. *Med. Econ.*, 195, December 7, 1970.
2. Butler, A. M.; Abrams, I.; Roessier, M. and Cutler, K.: Pediatric nurse-practitioners and screening physical examinations. *Clin. Pediat. (Phila.)* 8:625, November 1969.
3. Ener, R. W.; Hamburg, J. H.; Eichenbenger, R. W. and Kotheimer, T. G.: The clinical associate. *J. Ind. Med. Assn.* 63:234, March 1970.
4. Editorial: Physician's Assistants Recognized by CSC. *Greater K. C. Med. Bull.*, 19, January 1, 1971.
5. Myers, H. C.: The physician's assistant in the community hospital and in office practice. *Ann. N. Y. Acad. Sci.* 166:911, December 31, 1969.
6. Points, T. C.: Guidelines for development of new health occupations. *JAMA* 213:1169, August 17, 1970.



7. AMA Department of Health Manpower: The Child Health Associate. *JAMA* 212:1045, May 11, 1970.
8. News of hospital interest: Distinctive roles seen for each of three physicians' assistant categories. *Hosp. Prac.*, 37, October 1970.
9. Carlson, C. L. and Athelstan, G. T.: The physician's assistant. *JAMA* 214:1855, December 7, 1970.
10. Anderson, K. H. and Powers, L.: The pediatric assistant. *N. C. Med. J.*, 31, January 1, 1970.
11. Blomphip, J. M.: Department of defense may become a major supplier of physician's assistants for the civilian health field. *Med. World News*, 39, December 11, 1970.
12. Goldstein, M. S.: Medical corpsman as a source of civilian health manpower for New Jersey. *Med. Care* VIII: 254, May 1970.
13. Curran, W. J.: Law-Medicine Notes: The California "Physician's Assistants" Law. *New Eng. J. Med.* 283:1274, December 3, 1970.
14. News of hospital interest: What authority should be vested in physicians' assistants. *Hosp. Practice*, 33, October 1970.
15. Editorial: Dissuade Licensing of Additional Health Care Personnel Categories. *Greater K. C. Med. Bull.*, 15, January 1, 1971.
16. Theodore, C. N.: Physician support personnel in the 70's: Economic implications. *JAMA* 214:1301, November 16, 1970.
17. Myers, H. C.: The physician's assistant in the community hospital and in office practice. *Ann. N. Y. Acad. Sci.* 166:911, December 31, 1969.
18. Yankauer, A.; Connely, J. P. and Feldman, J. J.: Pediatric practice in the United States. *Pediatrics* 45:521, Supplement, March 1970.
19. Perkoff, G. T.; Kahn, L. I. and Peterson, M. L.: The division of health care research of Washington University School of Medicine: A program adaptable to medical and paramedical education. *Ann. N. Y. Acad. Sci.* 166:1009, December 31, 1969.
20. Anderson, K. H. and Powers, L.: The Pediatric Assistant. *N. C. Med. J.* 31:1, January 1970.
9. Carlsson, C., Dencker, S. J., Grinby, G. and Haggen-dal, J.: Noradrenaline in blood-plasma and urine during chlorpromazine treatment. *Lancet* 1:1208, 1966.
10. Axelrod, J., Hertling, G. and Potter, I.: Effect of drugs on the uptake and release of  $H_3$ -norepinephrine in the rat heart. *Nature* 194:297, 1962.
11. Axelrod, J., Whitley, L. G. and Hertting, G.: Effect of psychotropic drugs on the uptake of  $H_3$ -norepinephrine by tissues. *Science* 133:383-384, 1961.
12. Lippmann, W. and Wishnick, M.: Effects of metho-trimeprazine, other phenothiazines and related compounds on the levels of norepinephrine in the mouse heart. *J. Pharmacol. Exp. Ther.* 157:363, 1967.
13. Alexander, C. S. and Nino, A.: Cardiovascular complications in young patients taking psychotropic drugs. *Amer. Heart J.* 78:757-769, 1969.
14. Sloman, L.: Myocardial infarction during imipramine treatment of depression. *Canad. Med. Assn. J.* 82:20-22, 1960.
15. Richardson, H. L., Graupner, K. I. and Richardson, M. E.: Intramyocardial lesions in patients dying suddenly and unexpectedly. *JAMA* 195:254-260, 1966.
16. Huston, J. R. and Bell, G. E.: The effect of thioridazine hydrochloride and chlorpromazine on the electrocardiogram. *JAMA* 198:16-20, 1966.
17. Guillian, R., Reinert, R. E. and Smalley, R. L.: Sudden death in patients under phenothiazine therapy. *J. Kans. Med. Soc.* 71:213-218, 1970.
18. Marshall, L. J. and Green, V. A.: Propranolol and diazepam for imipramine poisoning. *Lancet* 2:1249, 1968.
19. Propranolol said to cut heart ills induced by drugs. *Hospital Tribune* 4:2, 1970.

## Phenothiazine Induced Cardiac Arrhythmia

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2. Hollister, Leo and Kosek, J. C.: Sudden death during treatment with phenothiazine derivatives. *J.A.M.A.* 192: 1035-1038, 1965.
3. Leestma, Jan and Koenig, Kenneth: Sudden death and phenothiazines. *Arch. Gen. Psychiat.* 18:137-148, 1968.
4. Kelly, G. H., Fay, J. E. and Laverty, S. G.: Thioridazine hydrochloride (Mellaril). Its effect on the electrocardiogram and a report of two fatalities with electrocardiographic abnormalities. *Canad. Med. Assn. J.* 89:546-554, 1963.
5. Desautels, Sylvio, Filteau, C. and St-Jean, A.: Ventricular tachycardia associated with administration of thioridazine hydrochloride (Mellaril). *Canad. Med. Assn. J.* 90:1030-1031, 1964.
6. Pruitt, Raymond: On sudden death. *Amer. Heart J.* 68:111-118, 1964.
7. Burda, C. D.: Electrocardiographic abnormalities induced by thioridazine (Mellaril). *Amer. Heart J.* 76:153-156, 1968.
8. Ban, T. A. and St-Jean, A.: The effect of phenothiazines on the electrocardiogram. *Canad. Med. Assn. J.* 91: 537-540, 1964.

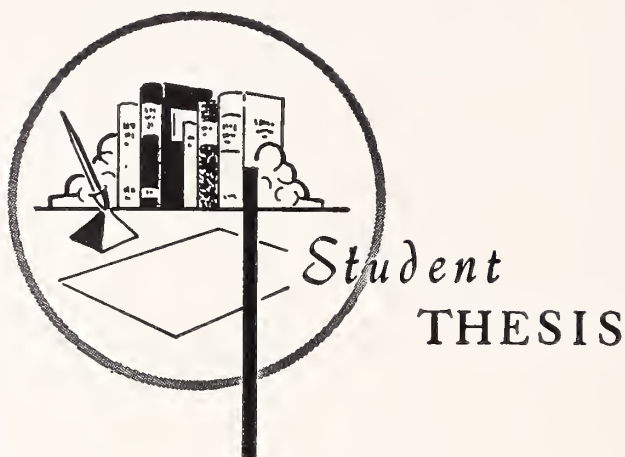
## EATON LABORATORIES ADDS FIVE FILMS TO LIBRARY

Three films related to neurology and two dealing with urology have been added to the Eaton Laboratories medical film library, according to David L. Manzer, special services manager. All are 16 mm., sound and color; the longest runs 22 minutes, the others about 15 minutes.

The neurology films are *Abnormal Movements*, by George W. Paulson, M.D., *Huntington's Disease*, by Dr. Paulson, and *Physical Therapy in the Treatment of Parkinsonism*, by E. Richard Blonsky, M.D. Dr. Paulson is affiliated with the Ohio State University Medical School, Dr. Blonsky with Northwestern University Medical School.

The films on urology are: *A New Operation for Post Prostatectomy Urinary Incontinence* (22 minutes) by Joseph J. Kaufman, M.D., University of California at Los Angeles Medical School, and *Voiding Dysfunction and Urinary Tract Infection*, by Emil A. Tanagho, San Francisco Medical Center, University of California.

All of these films and others are available to medical groups on free loan from the Eaton Medical Film Library, Norwich, New York 13815.



## *Dealing With the Dying Patient*

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"... and let those not call me who are incurable and whose illness is fatal—because Thou has decreed that they may not be cured."

—Jacob Zaholan in his seventeenth century Physician's prayer

NO CONSCIENTIOUS physician today would utter such a prayer, yet might easily sympathize with Zaholan when confronted with a patient who presents with a life-threatening disease such as cancer. There is no greater challenge to the therapeutic skills of the physician as is encountered with the dying patient. The goal of treatment is not the recovery of the patient nor is it simply the alleviation of physical pain. It should include the establishment of a psychologic relationship that will enable the patient to die with dignity and a minimum of psychic pain.<sup>1</sup> To accomplish this end, however, a host of formidable problems must first be resolved.

The initial and undoubtedly most important factor is the attitude of the physician himself. It is important to remember that the doctor is also human, caught up in the fears, anxieties and drives as fully as is the patient for whom he cares. After all, the physician's goal of sustaining health and prolonging life is always frustrated, finally, by death. As one doctor has candidly observed, "Nature has meant that man should die, and in the end she will have her way." Does not such a realization create tensions within the spirit of those who minister through

medicine? Does not this realization demand a broader context that can undergird the medical practice?<sup>2</sup> Some lines from Kasper reveal the doctor's own humanity:

In medicine, death is certainly present. . . . Early in his training, the premedical student has learned to feel, see, probe, and even kill living things; by the time he is in medical school, he is ready to call human cadavers "Max" or "Agnes" and he can slap one of them on the backside as if it were a window-display dummy. With pride, he will go with his fellows, reeking with death, to dine in public places where his conversation will horrify the squeamish, hurt the mourner, titillate the silly, and annoy almost everyone. Does it need to be said that this bravado is largely counterphobic? . . . The doctor is desensitized, not to death, but to the symbols of death such as blood, bones, corpses, and stench which disturb most people. . . . It is as if medical men had overcome a phobia and had then convinced others and themselves, that they had no basic inner fear.<sup>3</sup>

Quite ironically, however, the public concept of the young physician, capably trained to administer this most priceless of psychotherapeutic services, is hardly a valid one. Rich and Kalmanson express this dilemma quite succinctly:

The proper place to be born or to die is no longer the home, but the impersonal cubicle of a hospital. Therefore the physician, more than ever before, is being brought into still closer contact with the dying patient and must learn to manage this crucial phase of life. In the rather impersonal atmosphere of a general hospital, the house staff maintains the intimate day-by-day contact with the dying patient. Ironically the limitations of confidence and experience of these young physicians make

\* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. Pattison recently completed his internship at Mary Imogene Bassett Hospital, Cooperstown, New York.



them the least able to deal with this problem. A terminal or dying patient may generate feelings of great anxiety in any physician, especially in a young physician. The young physician's emotional insecurity is contrary to the public image of an overconfident, tough young man. The young physician faced with a terminally ill patient feels lost, inadequate, bereft of power to help or cure, and frustrated by his inability to apply the art of healing for which he has trained so vigorously. He must marshal all his defense mechanisms to escape feelings of complete frustration.<sup>4</sup>

A ready explanation for the fledgling physician's inability to deal effectively with this situation is the fact that death is ubiquitous. The fear of death generally remains unconscious; only under stress does it approach or break into consciousness. For many a doctor, contact with a dying patient is sufficient to provoke anxiety in himself. The doctor, like his patient, will one day die. The threat from reality that the presence of the dying patient represents may be resented. Since this threat (the patient) is external, it may be avoided—a very simple and effective means of self-protection. This is similar to a phobic state in which a person projects an inner anxiety on to some aspect of reality that is then shunned. The doctor frequently becomes seemingly indifferent to the dying patient, but actually resents him. Any degree of honesty will compel the doctor to recognize his irritation with the patient. The patient is often very demanding, and the irritation therefore seems justified and is rationalized. It requires some self-analysis to recognize that anxiety lies beneath this resentment. The conflict, then, is between the doctor's wish to protect himself and the demands of his "professional" conscience, which requires him to relieve the pain and suffering of his patient.<sup>5</sup>

Once this conflict has been resolved, the second major obstacle is encountered; that is, the problem of if or how to inform the patient with fatal illness about his actual disease state. Herein lies one of the most controversial of all the factors involved in dealing with the terminally ill. The ideal rule offered by doctors is that they should decide for each patient whether he really wants to know and can "take it." However, since, depending on the study, 70 to 90 per cent of doctors favor not telling their patients about terminal illness rather than making a separate decision for each patient, it appears that most doctors have a general standard from which the same decision flows for most patients—that he should not be told. This finding also indicates that the standard of "do not tell" receives very strong collegial support.<sup>6</sup>

On the other hand, Roose states that approximately 80 per cent of patients know their diagnoses at

one time or another during the course of illness. If the doctor understands the latent meaning of the question "What is my diagnosis?" and the question is answered honestly, then, and only then, will the patient feel free to trust the doctor with his innermost thoughts. The basis for closeness rests in complete honesty on the part of the physician.<sup>5</sup>

Conley is even more emphatic when he eloquently pleads for the presentation of the truth to the dying patient:

It is paradoxical that a dying person with an incurable illness has all of the rights pertaining to his death but none of the power. He is rarely consulted about the matter. He literally has no power over his remains once he has died. The power, the tempo, the timing, and the method are in the hands of those who attend him. The truth of the real situation is usually withheld from the patient and his misrepresentation about his condition involves him in a game of deception. Are not the statements to the dying patient more representative of the doctor's and the family's emotional structure than of the patient's? If there is any honor left in his life and any dignity in his dying, should not the patient have the right to make a choice for himself about his destiny on the basis of truth? The only rationale against such a philosophy would be the inadequacy of the patient to accept the fact or the incompetency of the attendants to present it. Neither seems justified against the patient's rights to die and the dignity of his rights to have a choice.<sup>7</sup>

In addition, although many doctors have by practice become skilled and accustomed to their part in the masquerade of eventual cure, their unease may well grow as the deception falters. Amongst other things, the doctor knows that eventually the well-intended charade must fail, the patient will die although he has been leading him to believe otherwise. Moreover, there is a lack of honesty between patient and doctor that is discordant. Many doctors are reticent with their patients, sparing in the information they divulge, but what they do tell their patients should always be in good faith. Hence the doctor, however well-intentioned when contributing to a deception, is apt to feel a nagging sense of failed trust. He is not in a good position to give the understanding which is needed so much if his dying patient becomes apprehensive or depressed. The doctor's unease at the situation may lead him to avoid his patient, cut short his visits, or, at least, avoid mentioning any topic which could lead to making a choice between disquieting truth and lies. This situation is apt to lead to the doctor "managing" the patient as an adult "manages" a child who is thought to lack the capacity to understand. Although some ill people may want the doctor to take over completely, others may find such "managing" adds to the sense of desolation that they, as dying people,

are beginning to experience. They may protest that they are not children, nor are they senile, they want a say in things that concern them.

This is one way in which the collusion between patient and doctor is strained and may break down altogether. The façade is bound to be tested further as the dying patient's health deteriorates, because then the hopes and the desperate pretense of the patient may not parallel the more deliberate false optimism of the doctor. A patient who believes or needs to believe that he will recover will expect any new symptoms to be given full attention. A doctor who recognizes the further symptoms as part of the inevitable disease process may appear to the patient to be viewing new developments in a cursory manner, dismissing of the symptoms and so, seemingly, of the patient. This reaction can cause a dying person to seek feverishly for further help which may result in sound advice but invites ineffective, expensive treatments that lead to eventual disappointment. If, on the other hand, the doctor plays his fore-doomed role of healer too vigorously, if he loses insight into the fact that he is playing a role, or if he himself cannot accept clear evidence that his patient will not recover, the patient may for a while have to endure uncomfortable investigations and treatments that might sustain a fluctuating hope but offer no material benefit.

The dying man cannot easily believe in recovery when he is aware of deterioration. His façade of unreasonable hope tends to crack, and although he may make frequent attempts at patching, the pretense will sometimes crumble or be abandoned. The cracks may appear as periods of fear and misery which to the dying man seem strangely causeless because he denies that his illness is fatal. He may often find false reasons for his emotional distress if he cannot yet admit that it originates from the fact that he is dying. In this situation, for example, he may become unduly preoccupied by some physical symptom or some trivial minor worry. He seems to be fussing over the trivial or exaggerating his discomfort. This may cause his friends and relatives or his nurses and doctor to become intolerant of his complaints, but it is safer for him to displace his anxieties and preoccupations on to problems potentially less devastating than distress over his approaching death.

The majority of these patients who are quite prepared to be told if they have little time to live are apt, despite their preparedness, to be met only by words which do not have the ring of truth. If such a patient then asks a straightforward question about his disease and prognosis his confidence may be more shaken by indirect answers than sombre truth. Then he may begin to test his doctor's optimistic outlook

or question what is behind his professional reticence. Dissatisfied with soft answers, he may repeat his inquiries in an oblique manner, perhaps by asking his doctor if he should go ahead with some future plans. He may ask his questions of many others; relatives, nurses, orderlies, fellow patients may give honest, revealing answers which could shine their cold light through the clouds of insubstantial promises and wisps of optimism.<sup>8</sup>

Blacher and Winkelstein have more specifically evolved an approach to the dying patient which gives the physician an opportunity to offer the truth regarding diagnosis and offer hope as well.<sup>9</sup> At the same time, it also gives the patient an opportunity to deny as much as he chooses. They would prefer to allow the patient and his family to share the news and thus be drawn closer together rather than be separated by the guilt of secrecy. Their approach is quite similar to that employed by Aldrich.<sup>10</sup> For example, they might tell a surgical patient: "Your operation revealed that you had a cancer, but the doctors are hopeful that they have completely removed it. Although one cannot offer guarantees in such a situation, we do feel optimistic about your condition." Further treatments that may be necessary such as radiation or chemotherapy can be then explained as a logical means of ensuring good results and be understandable to the patient. With such an explanation, the patient knows his diagnosis and need never suffer whispered or cryptic discussions about him or slips on the part of doctors, nurses or technicians. He can communicate openly with his family and doctor and at the same time deny as much as he needs to of the implications and possibilities of his situation. His doctor, aware of what he knows and what he needs to deny, can be open and comfortable with him and therefore less inclined to slip away since he is not troubled by the problem of keeping a secret.

The authors of this theory do not regard their approach as a straightjacket, but rather as a general framework. It is important to realize that this is an initial approach to the patient with a life-endangering illness, one which can pave the way for a more meaningful and helpful relationship between the patient and whomever is entrusted with his future care. It is an approach which makes it easier for the physician to carry out his role as a source of help and hope.<sup>9</sup>

However, despite the pros and cons of theory and conjecture, actual experience is quite different. It matters little "what" the patient is told, but rather, "how." As long as the physician approaches the patient, comfortable with his own personality, and with compassion, the patient will benefit. Those who are not told somehow know without ever asking and manage their necessary arrangements. Those who are



told go through an initial period of emotional shock, do what they have to, then settle down to their denial. Most, if not all, terminally ill patients defend themselves by denial as they approach death. And those who philosophize or wax poetic near the end are practicing a defense by isolation in the service of denial. So telling the patient the "truth" is not beyond discussion, but is academic. The personalities involved and the timing are crucial human variables.<sup>11</sup>

Verwoerd has set forth a valuable guideline in stressing the individuality of the patient in determining what and how to tell him of his disease state. He feels that the groundwork for effective communication with the patient must be laid early in the diagnostic process. While both physician and patient may have suspicions as to the nature and severity of the disorder, neither knows for sure, and the initial contact is relatively uncharged with emotional significance. The patient assumes the role of "reporter" and the doctor is the "recorder" in the taking of the medical history. In addition to evaluating the factual symptomatology, the doctor can and should be on the alert for clues bearing on the patient's emotional and intellectual reserves. Fairly reliable indicators include ego strength, intelligence and religious conviction.

Ego strength is the vital factor which determines how sturdily the fortress of self is organized—how well it is likely to endure the psychic shock, physical disability, pain and other eroding aspects of fatal illness. The physician can evaluate this quality by assessing the degree of success the patient has shown in handling stress in the past, the presence or absence of psychiatric or psychosomatic illness in his history, and the effectiveness of his marital, social, and occupational relations. By integrating these data with his intuitive clinical impression of the patient, the physician may be able to arrive at a reasonably accurate judgment of the amount of stress that the particular individual can withstand.

The presence of a firm, consistent religious faith without elements of extremism or fanaticism may support and confirm the physician's evaluation of the stability of the patient's character. It would be most unwise, however, to assign primary significance to this factor alone, as some individuals lacking such convictions may well be just as stable as or perhaps even more stable than those who possess them. Knowledge of the extent of the patient's religious belief can also be useful to the physician in structuring the lines along which effective communication can be achieved.

The patient's intellectual resources are important in determining his capacity for comprehension and consequently the level on which communication in general should be conducted—bearing in mind, of

course, that the patient's ability to understand is colored by his emotional attitudes. Thus, by determining his patient's intellectual capabilities the physician is able to attune his communication to the patient's frame of reference.

Another important area that the physician should explore during the initial phase of diagnosis is the extent to which the patient has already determined what his condition is and what this information means to him. In most instances, unless strong denial is present, patients have wondered and suspected to some extent, but few are willing to convert their suspicions into certainty immediately.

The patient's previous contacts with other doctors can tell the physician a great deal about how well informed or misinformed the patient is about his illness. It is important to give the patient ample opportunity to discuss the subject, because usually his ideas about the gravity of the condition will have been gleaned not so much from direct pronouncements of diagnosis as from indirect statements concerning the outlook for complications, advice regarding medications, etc.

A family history may be valuable both as an indicator of the extent of the patient's knowledge of his condition and as a clue to what the illness means to him.

In addition, since the suffering of many patients is sometimes unnecessarily intensified by other anxieties and fantasies about their disease, the physician should take time to explore their nature and extent. For example, cancer is usually associated with fears of decay or fantasies of being eaten away in a slow painful death. These fears evoke strong feelings of helplessness and shame, and the patient becomes concerned with the possibilities of total helplessness and of becoming so deformed that those around him will feel contempt and revulsion toward him. In addition, the emotional impact of interference with physiologic functions must be taken into consideration. As different ones are interfered with, the integrity of the patient's body image is threatened and altered, and different psychologic concerns are activated. Involvement of the reproductive organs resulting in loss of sexual capacity, disease of the lower intestine bringing about loss of bowel control, and lesions in the head causing blindness, deafness, or loss of speech all can induce severe emotional problems which cannot be separated from their basic physiologic causes and must be sharply distinguished from anxieties which occur in purely psychodynamic disorders such as carcinophobia and extreme hypochondriasis.<sup>12</sup>

Bibring is in accord with this comprehensive type of approach when he states:

No routine solution is satisfactory. There is no overall rule that will be of help to every patient alike.

Under the trying condition of terminal illness, it seems of special importance to know more about the patient, to differentiate between personality types, and to adjust communication and medical management to the different personality diagnoses. There will always be patients who feel safest and best taken care of if they can leave the knowledge of their condition in the hands of their doctors, without having to face the truth fully by themselves, and there will always be patients who will have to know whatever there is to be known about their illness. Otherwise patients in this latter group, once they suspect a serious diagnosis, do not feel safe with their doctor any longer and do not feel they can trust him fully. Between these two types there is a variety of others, each of which deserves our full attention in order to achieve the best possible result.<sup>13</sup>

However, regardless of all attempts to partially negate the shattering impact of such a monumental confrontation, the exchange during which the patient is told he has an incurable disease is an event which has a transient, usually upsetting effect on the patient. Surprisingly, in the course of this experience, the patient does not usually become clearly aware that he will die. This is in reference to deeper levels of awareness, as such death awareness is related to the patient's view of himself. It does not refer to superficial awareness which is primarily public and conscious, such as attitudes which might be expressed in response to a question, "what does death mean to you?"

The ways in which fatal, progressive disease affects the broad life experiences of the patient after he is told he is fatally ill and before he dies are most relevant for understanding what it means to the patient to die. His changing perceptions of himself, his changing perceptions of the rest of the world and the shifts in his capacity to be actively involved in his familiar world, should be viewed as a process through which a fatally ill person defines the meaning of death for himself. The product of this slowly developing process may be considered acceptance of death. Acceptance, in this sense, refers to a situation in which the patient's knowledge that he will soon die has intimate personal meaning and relevance for him. This is not to say that the attitude of the patient who has accepted the imminent reality of his death is one of serenity.

It is difficult, if not impossible, for a person to anticipate that he will no longer exist in a sense that is familiar to him. The idea of death as a condition, whether viewed as an irrevocable end, a severance of the future or as a transition to an eternal life, seems to be beyond the range of one's frame of reference and therefore it is not sufficiently palpable to receive sustained attention. Since, in memory, there is by definition only experience, there is no experimental basis for understanding death.<sup>14</sup>

Pattison, in a well thought-out paper, comments on the part-aspects of dying. The patient experiences progressive fears: the fear of the unknown, a basic death anxiety; the fear of loneliness, a feeling of separation, closely related to the fear of loss of family and friends, nurturing persons; fear of loss of body, the loss of part of oneself, a distortion of body image; fear of loss of consciousness; fear of regression; and a fear of loss of identity. In actuality, the latter fear is contingent upon the other fears, as each component contributes to the development of one's sense of identity.<sup>15</sup>

It is not unusual to note that with advertising and techniques of communication so refined, in many persons the word cancer conjures up an immediate image of death and futility. For some people, this word provokes prompt and necessary action, for others, delay and rumination. Clinically, many patients upon being told they have cancer experience overwhelming anxiety, inundating their personalities. They describe a feeling of being "stunned" or "fragmented." Some are emotionally paralyzed. Others call upon the defenses of denial, projection, repression, suppression, rationalization, magical thinking, and sublimation (among others) to cope with this anxiety. For all, the anxiety this time is experienced as an unaccustomed distress that seems to have little prospect of resolution.

The anxiety evoked is derived not only from a fear of "lingering, painful death," but from other sources as well. Several authors in a special study found that 93 per cent of the patients experienced guilt. In another study, two-thirds felt "it's my fault," "I've done something wrong." They attributed the cause of the cancer to sin (aggression, sexual), falls and outside agents. Fear of mutilation was prominent. Some of the sequelae of this guilt and fear were delay in seeking treatment, feelings of inferiority, inadequacy, dependency, rejection and inhibition of communication.

When regression is used as a defense, a paradox which is of concern to the doctor is (or may be) encountered. The patient becomes very dependent and seemingly grateful. Unfortunately, this is only on the surface. Actually, the patient feeling this great need for the doctor and seeing himself so passive and vulnerable, becomes resentful. This resentment frequently goes outside the patient's awareness, and is followed by guilt for resenting the doctor who is being "so nice." At this point the physician sees an irritable, demanding or withdrawn patient. It is incumbent upon the doctor to be aware of this and not regard the patient's behavior as being personally directed toward him.

Most dying patients entertain suicidal fantasies, but rarely act upon them. Although suicide osten-



sibly would be avoidance of the pain of dying, the unconscious fantasy would be punitive. "Cheating" death, in a way, would be "cheating" and punishing those around them (family, friends, doctor) who by not magically curing them, assume responsibility for the disease. Then "they will be sorry." The patient is thereby attempting retaliation. The family, prepared by their guilt in feeling "there but for the Grace of God, go I," concur in this retaliation.<sup>16</sup>

Whatever defense mechanisms are encountered by the physician, there also occur characteristic changes in the pattern of communication of his patient as the latter's disease progresses. Abrams has vividly described the basic alterations present in this aspect of cancer patients at different stages of their illness. These patterns seem to occur consistently in the majority of patients regardless of age, sex, socioeconomic level or sophistication about the disease. These findings are significant because they offer physicians clues to an understanding of what and to whom these patients want to talk about their diagnosis and their prognosis. For the professional person it becomes easier to direct the management of the patient in sensitive areas, to diminish his own anxieties and, thus, to make total treatment more effective.

In the initial stage, the data reveal that most patients need and are able to talk freely, honestly, and repeatedly about their diagnoses with physicians and other significant persons. There is an air of optimism once the initial shock is over and the hopeful signs stressed. It was observed that it heightened anxiety to tell more of the truth than the patient wanted to know; however, the data pointed out that at this stage of the illness the patient wished to know the truth and was relieved when he and his physician were partners in therapy.

In the advancing stage there is a marked change in what and to whom the patient directs his questions about his medical situation as well as in the doctor-patient relationship. Hope now gives way to fear, truth to veiled and measured statements, and faith in physicians to fear of abandonment. The patient appears to avoid the diagnosis as it was described and discussed in the initial stage. One almost senses that the patient and the physician begin to fence with one another. Few of these patients ever take the opportunities offered by the physicians to ask specifically about their present medical situation. The patients who did seemed to wish they had not done so, and it was noted that they rarely pursued their request on subsequent visits. Gradually, they became more passive, more accepting and less demanding. They even avoided all contacts with professional persons previously sought out for help and support. The physician became increasingly the focal person in their existence. They depended on him for living,

not dying, and looked forward primarily to a return appointment—the symbol of hope.

In the terminal stage silence becomes the common language, especially in the areas of greatest anxiety. However, there is the need for different kinds of support from different persons. Visits from significant persons regularly helped to diminish the feelings of abandonment. For it was evident that, to many, abandonment was harder to bear than fear of dying and of death.<sup>17</sup>

It is readily apparent that the obstacles encountered in dealing with the dying patient are numerous. A final but highly significant one is that of specific suggestions for patient management. While this is another area of controversy, in general, care of the fatally ill patient from diagnosis to death requires a therapeutic program which attempts to slow down the primary disease process as much as possible, includes specific measures for symptomatic relief and provides supportive therapy to bolster the patient's physical and emotional resources and make it generally easier for him to live with his disease. The selection of particular treatment techniques on the first two levels is determined, primarily, by physiological factors. The choice of a general supportive program will depend more on psychological factors, however.

The effectiveness of a supportive program will depend on the quality of communication between physician and patient and on the success which the physician is able to achieve in (1) maintaining a realistic view of palliation; (2) encouraging a subjective sense of control in the patient, and (3) controlling pain.

If the patient is to retain anything approaching a positive view of his remaining days, it is essential that a realistic palliative program be continued to the very end. As long as the patient is alive, the physician should feel that nothing can happen which cannot at least be mitigated. Defeatism should be avoided at all costs, in word as well as action, for the beneficial results of supportive therapy can be undermined in a single stroke by a manner which betrays feelings of futility.

Feelings of confidence and control can be strengthened by anticipating the patient's needs and making provision to satisfy them before they become acute. The personal inability to satisfy needs is usually felt as a painful loss by the patient. When one is able to anticipate a need before it arises, however, the patient is spared one more reminder of his inadequacy and he may thus retain a subjective sense of control. To accomplish this, the medical personnel must obviously stay one jump ahead of the game. Anticipation of the patient's needs does not require any extraordinary intuitive sense, however. Most of these needs are universal: sleep, satisfaction of hunger and thirst, and freedom from pain and anxiety.

A second manner of obtaining a sense of control is by providing mobilization and diversion for the patient who still has a measure of energy reserves. Any activity which moves an individual about, even on a very small scale, provides him with a changing sensory input, creates diversion and avoids boredom.

A third way to promote a measure of self-confidence and independence is to encourage the patient to care for himself as much as he is able.

For the terminally ill patient, a subjective sense of control can also be fostered by setting up a regimen which functions as an "ego prosthesis." Because the disrupted ego organization of the patient in terminal illness diminishes his resistance to external stimuli, he needs to have his environment structured for him in a regular, reassuring manner. A relatively constant spatiotemporal milieu can, in a sense, act as an ego prosthesis which minimizes the patient's feeling of loss of mastery by not challenging his adaptive abilities.<sup>16</sup>

In any therapeutic approach it is most important to remember that the patient, as well as the physician, has the need for simultaneous acceptance and rejection of death—a coexistence that is delicate and subtle in its equilibrium. As death comes closer, the patient may become irritable, contradictory, and more demanding, wanting to live but impatient to die. It requires effort on the part of the physician to remain flexible, meeting some of the patient's requests, standing firm in the face of others.<sup>18</sup>

Of what service can the doctor be in the ending period? A great deal. The listening continues and, at the very end, the doctor offers sadness as well as hope. Not tears, this belongs to the family, but the nonverbal sadness one friend feels for another on parting. Nor does the doctor bring hope in a religious sense. He may even help the patient accept a religious death without exerting his own convictions.

The hope to be inferred here is concerned with self-dignity, achieved through working through the difficult process of dying—just as one feels a sense of accomplishment by working through the equally difficult process of living.<sup>11</sup>

## References

1. Tarnower, W.: The dying patient. *G.P.* 40:97, July 1969.
2. Johnson, W. G.: To die as a man: Disease, truth, and Christian ethics. *J. Iowa Med. Soc.* 56:815, August 1966.
3. Kasper, A.: The doctor and death, in Feifel: *The Meaning of Death*. New York, McGraw-Hill, 1959.
4. Rich, T. and Kalmanson, G.: Attitudes of medical residents toward the dying patient in a general hospital. *Postgrad. Med.* A-129, October 1966.
5. Roose, L.: To die alone. *Mental Hygiene* 53:324, July 1969.
6. Glaser, B.: Disclosure of terminal illness. *J. Health Human Behavior* 7:83, 1966.
7. Conley, J.: Rights of the dying patient. *Arch. Otolaryn.* 90:405, October 1969.
8. Hinton, J.: The dying and the doctor, in Toynbee: *Man's Concern With Death*. New York, McGraw-Hill, 1968.
9. Blacher, R. and Winkelstein, C.: The initial contact with the cancer patient. *J. Mount Sinai Hosp.* 35:424, July 1968.
10. Aldrich, C.: The dying patient's grief. *JAMA* 184:329, 1963.
11. Schnaper, N.: Management of the dying patient. *Mod. Treat.* 6:756, July 1969.
12. Verwoerd, A.: Informing the patient with fatal illness. *Postgrad. Med.* A-95, December 1966.
13. Bibring, G.: In Cope, O.: *Man, Mind and Medicine*. Philadelphia, J. B. Lippincott, 1968.
14. Koenig, R.: Anticipating death from cancer—physician and patient attitudes. *Mich. Med.* 68:902, September 1969.
15. Pattison, E.: Experience of dying. *Amer. J. Psychother.* 21:32, 1967.
16. Verwoerd, A.: *Communication With the Fatally Ill*. Springfield, Ill., Charles C Thomas, 1968.
17. Abrams, R.: The patient with cancer—his changing patterns of communication. *New Eng. J. Med.* 274:321, 1966.
18. Tarnower, W.: The dying patient: Psychological needs of the patient, his family, and the physician. *Neb. Med. J.* 54:6, January 1969.





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# The President's Message

DEAR DOCTOR:

"To the Stars Through Difficulties" . . .  
This motto, which appears on the Great Seal of Kansas, is the subject of my message this month, because recent events have underscored for me a couple of facts about our state:

First, no state can surpass Kansas' history of overcoming any obstacle or hardship in its path to greatness.

Second, while we've reached the stars, our national image is still in the dust.

It was during the AMA convention in Atlantic City that this was most recently brought home to me. The president of another state society (who shall remain nameless), when he learned I was from Kansas, made a number of disparaging remarks about Kansas, its climate, terrain and people.

I argued briefly with him, then lapsed into silence, knowing the futility of trying to educate a geographic snob. But I was stunned by his pointless, mindless attack on our beautiful and productive state, and I brooded about it on my drive home from the crowded, polluted and cluttered East Coast.

As we came west, the dirt and clamor began to fall away. The cities became more open, the towns more attractive, the skies clearer and the people friendlier.

And, as I crossed the Missouri-Kansas border, Kansas greeted me with a warmth and honesty I had missed on my trip back East.

The wheat harvest had not yet begun in the section I traversed, and the golden fields rippled in the breeze under the bright blue sky.

I was home. And I was glad.

No one who ever got to know Kansas could make those comments I hear frequently in my travels . . . comments that infer we are backward people living in a dust bowl. This image reflects not just on the citizens in general, but on physicians in particular, upon their type of practice, their hospitals and universities.

And it's all undeserved.

For a "backward" state, we've done pretty well at producing some of America's most forward-thinking persons. Dwight D. Eisenhower is a product of our state, and chose its soil as his final resting place. Industrialist Walter Chrysler, athlete Jim Ryun, playwright William Inge, and musician Stan Kenton had their origins in Kansas.

The Menninger Foundation and Clinic in Topeka is internationally known and respected as the center of psychiatry. It was founded by native sons.

The Hertzler Clinic at Halstead is known around the world, as was its founder, Arthur Hertzler.

More than half the light aircraft manufactured in the world comes from Wichita. Two Kansans, Walter Beech and Clyde Cessna, founded this vital industry.

Kansas is the breadbasket of the world, producing



enough wheat each year to feed half the world . . . producing more than one-fifth of America's beef, and serving the nation through more than 630 food processing firms.

The list is endless.

Anyone who has ever driven the Flint Hills in the spring knows the verdant beauty of that section of our state. The rolling plains of Western Kansas reach to the Rocky Mountains—their well-ordered farms and ranches a tribute to the sturdy pioneers who broke the sod and made a state . . . "to the stars through difficulties."

I didn't mean to become rhapsodic. But my point is this:

Our concern in Kansas is providing enough physicians to treat the people. We have a great state and its story must be told to physicians who seek a better life, a clean, crime- and pollution-free life for themselves and their families.

Unless you and I tell the story of Kansas as it really is, we'll suffer a chronic loss of young physicians to other states.

The job of selling Kansas is the job of every individual.

Doctor, are you telling the true story of our state to other physicians who might want to practice here?

*Dr. J. J. Reak, M.D.*

*President*

# Medical-Legal Page

## Failure to Take Tests Prior to Tonsillectomy

Exclusion of testimony as to whether a urinalysis would show systemic disorders and diseased kidneys was error where it had already been established that acute pyelonephritis was diagnosed in a patient after a tonsillectomy, the Massachusetts Supreme Court ruled. From the excluded testimony, the jury could have inferred that, had the tests been done before the operation, the operation might not have been performed. A directed verdict for the surgeon was set aside, and a new trial ordered.

A nurse, complaining of a sore throat, consulted a surgeon in charge of the ear, nose, and throat service at the hospital where she worked. He arranged for her to be admitted to the hospital for a tonsillectomy. After the operation there was intermittent bleeding, which required sutures and blood transfusions and finally a second operation. On the third day after the operation, the surgeon observed that the patient was jaundiced. A week after the operation, the patient refused to let the surgeon see her any more.

The patient brought action against the surgeon, contending that he was negligent in his performance of a tonsillectomy. She contended that he had failed to arrange for and check the results of routine pre-operative tests—specifically, a urinalysis and blood tests.

The surgeon testified at the trial that he had arranged for a urinalysis prior to the operation and that he had checked the results. He said that the test would be in the hospital record but that the sheet containing the information was missing. He stated that blood tests and urinalysis were routine and that, although he did not remember the tests, he would not have operated if they had not been done.

Part of the patient's duties as a nurse had included seeing that patients had urinalyses. She testified that when she was admitted to the hospital no samples of blood or urine were taken. A urinalysis was not done until after the second operation.

Part of the hospital record, introduced at the trial, indicated that blood tests done after the operation indicated that there was no defect in blood coagulation. The hospital record also included a diagnosis made after the second operation, indicating that the patient had infectious hepatitis and acute pyelonephritis.

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The assistant superintendent of the hospital testified that urinalysis and blood examination were standard preparation for an operation. He stated that the purpose of the urinalysis was to determine whether there was kidney infection or disease. He said that results of such tests would be incorporated in the hospital record and that the operating surgeon would have access to them. There were no such test results in the records for the patient.

At the conclusion of the evidence, the trial court judge directed verdicts on all counts for the physician. The patient filed a bill of exceptions as to the propriety of the directed verdicts and the exclusion of certain evidence.

The patient contended that the court erred in directing verdicts for the physician, as there was sufficient evidence to present a question for the jury. The supreme court said that the direction of verdicts was proper under the circumstances but that if the testimony of another physician from the hospital had not been excluded, the result might have been different.

On cross-examination, the physician answered in the affirmative when asked if a urinalysis would show systemic disorders as well as diseased kidneys and if such indications would necessitate further tests. He was also asked whether, if tests had been made prior to the operation and had shown results identical to those of tests after the operation, a tonsillectomy would have been indicated. The court said that it would not be irrational to infer that test results before and after the operation would not differ materially.

The supreme court held that the evidence cited was erroneously excluded by the trial court and that a new trial must be held.—*Civitarese v. Gorney*, 226 N.E.2d 668 (Mass.Sup.Jud.Ct., Feb. 5, 1971)

## Partial Paralysis After Surgery Results in \$650,000 Award

A California jury awarded \$650,000 to a young man who was partially paralyzed after allegedly experimental spinal surgery. The action was brought against several physicians, a medical group and a hospital. The verdict was against all but one physician.

Originally, weakness of the shoulder and arm muscles developed as a result of an injury to the young man. A diagnosis of a contused spinal cord was made, and he underwent physical therapy continuously for about three years. At the end of the

(Continued on page 364)





## Editorial COMMENT

### *Toward a Glossier Dossier*

Viewers with alarm have had a heyday in recent months over the incursions being made into the hallowed areas of privacy and secrecy. The problem is they meet themselves coming and going. If the protection of privacy is carried far enough, we run into secrecy, and if we reveal the secrets they think should be revealed, we're back to worrying about privacy. It is one of those pendulum mechanisms: we never get it settled, just swing back and forth scratching our heads. It all comes under the heading of that problematic concept, freedom, which no one has successfully defined since one man's freedom is another man's stricture. The attitude today is to let freedom ring and hope it isn't the wrong number.

Physicians are more than averagely involved in this business of keeping things confidential and at the same time are aware that one of the features making it hard to manage is that many people are not as anxious for privacy as we are concerned about maintaining it. We are reminded of the attempts of the hospital staff to uphold the convention of privacy in the emergency room against the earnest efforts of the local *Tageblatt* to get the gory details from the attending physician. Our success was rewarded by a call to the hospital administrator from the aunt of an injured child wanting to know why nothing had been in the paper about the incident. He gave up and started publishing a daily form chart on the emergency room activities in keeping with the Public's Right to Know.

Since the vacuum of censorship (which is the practical application of secrecy and privacy) is abhorrent and no one has devised a suitable gauge to determine how much is enough, we suggest opening the valve completely and letting in a full atmosphere of license. It is safe to say that somewhere, through the efforts of the Armed Forces, FBI, IRS, and Census Bureau, as well as the non-governmental information gatherers such as credit bureaus and opinion poll takers, every citizen has a file somewhere con-

taining a few odd bits of information about him. Our plan is simply to expand this file to include all the information about him and make it available to anyone. The immediate reaction will be one of outraged consternation, but some dispassionate consideration will reveal the wisdom of the plan. We are afraid for the people next door to know our secrets because of what they might do with them. What could banish fear so quickly as the knowledge that they know but can't do anything about it because we know their secrets too? What could bring us more quickly to the great goal of social leveling than the total equality of having no secrets. When there is no longer any need to invade privacy, the urge will be gone.

The crux of the matter is that our secrets so jealously guarded from others are titillating in proportion to our efforts at concealment. The depressing reality is that our private affairs aren't really as exciting as we would have others think. The nudists have demonstrated that when we divest ourselves of our material covers and stand exposed with all our lumps and bumps, we are of no great interest to anyone save perhaps a dermatologist or a malnourished mosquito. So would it be with our private affairs. Once they were exposed and available for all to enjoy, they would cease to inspire any interest. And, we would find hidden facts about others just as dull, once the imagination was neutralized.

The plan should merit the approval of all religions since cleansing the soul by one form of confession or another is the common denominator of all. Our psychiatric colleagues would object because the catharsis of maintaining one's file up to date will put a good many of them out of work, but that will give them more time for writing books and directing plays.

The organizational structure is already set up. The Federal Bureau of Investigation will become the Federal Identification Bureau (FIB). Its only problem

will be to keep some eager parties from padding their dossiers in order to outdo the neighbors. It will take some time to bring up to date some of the files on the elders, but the younger generation is off to a good start since the present day birth certificates already ask for everything except how many times the baby had the hiccups *in utero*. Editors and other functionaries of the news mediums (that's to show that we know it's supposed to be plural—we're just not very good at Latin) will be spared the agonies they now suffer arriving at the realization that they know better than anyone else what we should be allowed to know. (Present company excepted.)

Medical history taking will obviously be simplified because the physician will not have to struggle for half an hour finding out what is really bugging the patient. A quick printout on the direct wire from the FIB will tell the story as well as how many of his colleagues have already had a try at the problem.

After the initial outcry against the system, there will be a surge to find out all we can about each other. Then the tide will ebb and come to equilibrium as the state of disinterest sets in. The end result: privacy for all because everyone knows or can find out, and secrecy for all because there's no longer any point in trying to find out. In the struggle for freedom and equality, what could be more free and equal?

Well, it ought to work as well as anything else that has been tried so far.—*D.E.G.*

## Medical-Legal Page

(Continued from page 362)

three years, his physician made a diagnosis of syringomyelia (cystic cavity within the spinal cord). Surgery was performed to drain the fluid and replace the muscle into the cavity and prevent future fluid accumulation. As a result of the surgery, the young man suffered quadruple paralysis.

The injured man brought action for damages, contending that the operation had been experimental and had been improperly performed. He said he was not fully informed regarding the procedure and the risk involved. His physician's ex-partner testified for the injured man regarding the procedure and changes in records.

The physician denied any negligence and stated that the surgery had not been experimental. He contended that the man had been fully informed of the risk of the operation and stated that without the surgery the man would either have died or been confined in an iron lung.

The injured man, who had just been admitted to the state bar, was on welfare at the time of the trial. He claimed medical expenses of \$10,000. During settlement talks, damages of \$250,000 were demanded, but no offer was made. The jury awarded the injured man damages of \$650,000.—*Achtenberg v. Jenkins* (Cal.Super.Ct., Los Angeles Co., Docket No. 893865, 1971)

## Malicious Prosecution Claim Disallowed in Malpractice Suit

A counterclaim for malicious prosecution may not be maintained in a lawsuit for medical malpractice, the Supreme Court of California ruled.

A woman retained an attorney to represent her in a malpractice claim against a physician. After the case was filed, the physician filed a counterclaim in the same lawsuit. The counterclaim was for malicious prosecution, and was against both the woman and her attorney. The motion of the woman and her attorney to dismiss the counterclaim was denied. They appealed.

Reversing the order, the state supreme court ruled that before an action for malicious prosecution may be brought, the original judicial proceedings must first end in the physician's favor. To rule otherwise, the court said, would put the suing party and her attorney in potentially adverse positions.—*Babb v. Superior Court of Sonoma County*, 92 Cal.Rptr. 179, 479, P.2d 379 (Cal.Sup.Ct., Jan. 15, 1971)

**The American Board of Family Practice announces that it will give its next examination for certification in various centers throughout the United States. The examination will be over a two-day period on April 29-30, 1972. Information regarding the examination can be obtained by writing:**

**Nicholas J. Pisacano, M.D., Secretary  
American Board of Family Practice, Inc.  
University of Kentucky Medical Center  
Annex #2, Room 229  
Lexington, Kentucky 40506**

**PLEASE NOTE: Deadline for receiving completed applications in the Board office is February 1, 1972.**



# 21st Annual Meeting

## Kansas Academy of General Practice

RAMADA INN

SEPTEMBER 10-12, 1971

MANHATTAN

### FRIDAY, SEPTEMBER 10

9:00 a.m. . . . . REGISTRATION

Golf—Manhattan Country Club, Darrell L. Evans, M.D., Chairman

(Practice rounds, morning; play, afternoon)

Trap and Skeet Shoot—Manhattan Gun Club, T. H. White, M.D., Chairman

Tennis—Philip H. Hostetter, M.D., Chairman

6:00 p.m. . . . . COCKTAIL HOUR

7:00 p.m. . . . . BUFFET, for members, wives, guests

8:00 p.m. . . . . BUSINESS MEETING

Ernie J. Chaney, M.D., President, Kansas Academy of  
General Paactice, presiding

### SATURDAY, SEPTEMBER 11

7:15 a.m. . . . . PAST PRESIDENTS' BREAKFAST, for all members, wives,  
guests

Donald D. Goering, M.D., Immediate Past-President,  
K.A.G.P., presiding

8:30 a.m. . . . . BUSINESS MEETING, Election of Officers

Ernie J. Chaney, M.D., presiding

1:00 p.m. . . . . UTAH STATE VS. KANSAS STATE football game

6:30 p.m. . . . . COCKTAIL HOUR

7:30 p.m. . . . . ANNUAL DINNER

Ernie J. Chaney, M.D., presiding

Installation of Officers—William E. Lotterhos, M.D.,  
President, American Academy of General Practice, Jackson,  
Mississippi

PROGRAM: A Select Group of Former and Present  
"Singing Quakers," Friends University, Wichita

### SUNDAY, SEPTEMBER 12

*(This meeting will be held in the Forum Room, Student Union Building, Kansas State University.)*

9:00 a.m. . . . . SCIENTIFIC PROGRAM: LEARNING DISABILITIES

Ernie J. Chaney, M.D., presiding

SYMPTOMS OF THE LEARNING DISABLED CHILD IN  
SCHOOL AND AT HOME—William R. VanOsdol, Ph.D.,  
Edmond, Oklahoma

THE PHYSICIAN LOOKS AT SCHOOL FAILURE—Wesley R.  
Whittlesey, M.D., Oklahoma City

CHILD STUDY APPROACH TO EVALUATION OF LEARNING  
DISABILITIES—Ellidee Dotson Thomas, M.D., Oklahoma  
City

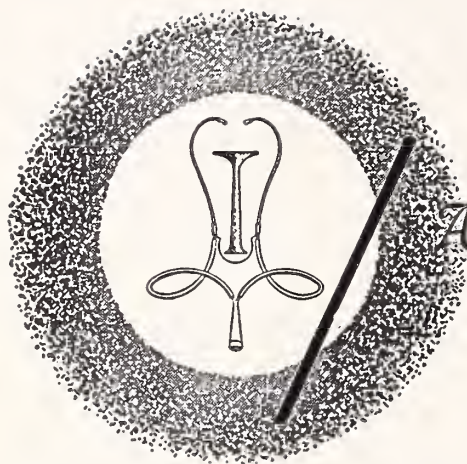
12:15 p.m. . . . . LUNCHEON—Ramada Inn

Speaker: William E. Lotterhos, M.D., President, A.A.G.P.

2:00 p.m. . . . . PANEL DISCUSSION—Speakers from Morning Session

(Forum Room, K.S.U. Student Union)

Moderator: Ernie J. Chaney, M.D.



## Announcements

*Professional meetings, conferences, and postgraduate courses of national importance are listed for the DOCTOR'S CALENDAR. Notice of the session is posted in advance to allow the physician time to make preparations.*

### SEPTEMBER

Sept. 10-11 22nd annual meeting and 8th Delegates' Assembly, Kansas Heart Association, Hilton Inn, Salina. For information write the Kansas Heart Association, 5229 W. 7th St., Topeka 66606.

Sept. 13-18 American Electroencephalographic Society and American Society of EEG Technologists, Hotel Radisson South, Bloomington, Minnesota. Write Mrs. Margaret H. Henry, Exec. Secretary, American EEG Society, 36391 Maple Grove Road, Willoughby Hills, Ohio 44094.

Sept. 20-24 Annual meeting, American Academy of Ophthalmology and Otolaryngology, Convention Center, Las Vegas. Write C. M. Kos, M.D., Exec. Secretary-Treasurer, American Academy of Ophthalmology and Otolaryngology, 15 Second St., S.W., Rochester, Minnesota 55901.

Sept. 24 Third annual academic assembly devoted to an intensive study of Diseases of the Thyroid, St. Francis Hospital, Wichita. Participating in the lectures and discussions: William McConahey, M.D., Endocrinologist, Section of Internal Medicine, and Donald Childs, M.D., chairman of the Section of Radiotherapy, both of the Mayo Clinic Foundation for Education and Research; John Beach Hazard, M.D., Department of Pathology, Cleveland Clinic; and Richard G. Martin, Chief, Section of Surgery,

University of Texas M. D. Anderson Hospital and Tumor Clinic.

Sept. 27-29 7th National Conference, sponsored by the American Cancer Society and National Cancer Institute, Biltmore Hotel, Los Angeles. Write Sidney L. Arje, M.D., c/o American Cancer Society, 219 E. 42nd St., New York, New York 10017.

### POSTGRADUATE EDUCATION

University of Colorado:

Sept. 27-Oct. 1 *Hospital Medical Staff Conference* (Estes Park)

Oct. 4-8 *High Risk Infant Care* (limited)

Oct. 11-13 *Obstetrics and Gynecology*

For further information write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 East Ninth Avenue, Denver 80220.

Sept. 13-15 *Clinical Electroencephalography*, sponsored by the American EEG Society, Minneapolis, Minnesota. Write Dr. Donald W. Klass, EEG Course Director, Mayo Clinic, Rochester, Minnesota 55901.

For further information on the following continuing education courses, contact the Continuing Education Department, The Children's Hospital, 1056 E. 19th Ave., Denver, Colorado 80218.

Sept. 13-15 *Regional Newborn and Perinatal Care*, sponsored by the American Academy of Pediatrics and The Children's Hospital, Denver. The postgraduate course will be held in Vail, Colorado.

Oct. 22 *CDC Symposium on Nutrition.*



# AMA House of Delegates

## *Summary of Actions Taken at the 120th Annual Convention, Atlantic City, June 20-24, 1971*

IN ADDITION TO STUDYING, discussing in committee and acting on 158 items of business that came before it at the 120th Annual Convention, the House of Delegates heard a stirring speech by the President of the United States as well as outlines of the future as seen by both outgoing and incoming Association presidents.

Meeting for a total of 13 hours and 53 minutes, the House acted on six special reports; 31 reports from the Board of Trustees; two from the Council on Constitution and Bylaws; four from the Council on Medical Education; eight from the Council on Medical Service; two from the Judicial Council; one from the Council on Long Range Planning and Development; and 104 resolutions.

### **Changes in the Organization**

The Guam Medical Society of Agana, Guam, was accepted as a constituent association of the AMA, bringing to 55 the number of state, commonwealth and territorial associations.

The scientific Section on Psychiatry and Neurology was separated to form two sections—the Section on Psychiatry and the Section on Neurology.

The Bylaws of the Association were amended to create a new membership classification. Under "Active Members," there now are two classifications: Regular Members and Direct Members. There is no change in the definition of Regular Members. Direct Members include service members; physicians employed by federal agencies; and interns and residents.

### **Right of Access to Medical Care**

(Resolution 71-48, defining health care as a human right, was adopted by the Kansas Medical Society House of Delegates [note June JOURNAL, page 294]. The Kansas delegates introduced this to the AMA House of Delegates as instructed and it became AMA resolution 43. The reference committee combined this with California resolution 91 and the wording of the latter, a portion of which follows, was adopted by the AMA House of Delegates.)

The House elaborated its existing policy regarding the right of access to medical care by adopting this statement: "It is the right of every citizen to have access to adequate medical care, but it is the re-

sponsibility of the citizen or of society to seek it. The American Medical Association will use all means at its disposal in an endeavor to make adequate medical care available to meet the needs of each person.

"In the spirit of inheritance of the Oath of Hippocrates, the AMA reaffirms its obligation to humanity. In this effort, the AMA cannot assume the responsibilities of government or the individual citizen. The AMA also recognizes the right of the physician to choose whom he will serve and the conditions under which he will render this service. These are integral essentials in the delivery of quality medical care."

### **Drugs and Drug Abuse**

In addition to the action taken in direct response to President Nixon's speech to the House, delegates also took several other actions on the subject of drugs and drug abuse.

A report of the Council on Mental Health and its Committee on Alcoholism and Drug Dependence was filed for the information of the Association. It contains these recommendations for the medical profession:

1. Increased attention to alcoholism and drug abuse in the curriculum of medical schools.
2. Medical students, interns and residents should be encouraged to associate themselves with "street clinics" to establish links between the profession and young drug abusers.
3. Continued development and dissemination of reliable information to physicians and other health professionals.
4. Laws and regulations should be modified to recognize alcoholism and drug dependence as illnesses.
5. Closer liaison between medical societies and law enforcement and licensure bodies to deal jointly with the problem of physicians suspected of professionally misusing or personally abusing drugs.
6. Continually up-dated factual material for public consumption.
7. Increased emphasis on the responsible use of drugs for therapeutic purposes, both by the public and by physicians.

The House resolved to follow "studies being conducted to ascertain the relationship between proprie-

tary drug advertising in the mass media and excessive use of self-prescribed drugs and drug dependence problems" and to "cooperate in every way possible in the studies being conducted by the FTC to assure the enactment of proprietary drug advertising regulations in the interests of protecting consumers."

Delegates also resolved to "urge all physicians to limit their use of amphetamines and other stimulant drugs to specific, well-recognized medical indications."

In addition, the House resolved to go on record "favoring the implementation of stern measures for narcotic traffic control in Vietnam, as well as measures for the identification, prevention, diagnosis, and adequate treatment of addicts within the armed forces, with adequate provision for the availability of proper follow-up and aftercare."

### Terminology and Definitions

Concerned with the growing use of the term "physician's associate" as opposed to the term "physician's assistant" to describe new health occupations, the Board and its Council on Health Manpower recommended (and the House agreed) that the term "physician's associate" be used only to denote another physician.

The House resolved that future editions of the publication *AMA Drug Evaluations* "avoid the use of the word 'irrational.'"

Delegates adopted three definitions in the area of peer review:

"Peer Review: Evaluation by practicing physicians of the quality and efficiency of services ordered or performed by other practicing physicians. Peer review is the all-inclusive term for medical review efforts. Medical practice analysis; inpatient hospital and extended care facility utilization review; medical audit; ambulatory care review; and claims review are all aspects of peer review.

"Medical Practice Analysis: A function of the medical society, or other organization authorized by the medical society, designed to coordinate all peer review efforts of a community. Medical practice analysis focuses on the development and application of criteria for optimal medical care, and evaluates the individual and collective quality, volume, and cost of medical care, wherever provided.

"Claims Review: Peer evaluation and adjudication of claims questions referred for peer review by any party with a valid interest in the case."

Definitions of other elements named in the "Peer Review" definition itself were referred back to the Council on Medical Service for further refinement.

### Peer Review

Further in connection with peer review, the House resolved:

"That the American Medical Association and its constituent state associations reaffirm their support of voluntary mechanisms of review and education by physicians such as grievance committees, insurance review committees, and the numerous hospital review mechanisms, many of long standing;

"That the AMA and its constituent state associations continue to stress that peer review shall be considered a professional function, and as such shall be carried out by physicians or under the sponsorship of the county and state medical societies;

"That this House of Delegates call on all state and county medical societies and the AMA to take an active responsible role in peer review and to document for the information of the public current functioning procedures and programs which are serving in the interests of delivering good medical care."

### Better Health and Better Patient Care

With respect to teenage pregnancy, the House adopted the statements that "The teenage girl whose sexual behavior exposes her to possible conception have access to medical consultation and the most effective contraceptive advice and methods consistent with her physical and emotional needs" and "The physician so consulted should be free to prescribe or withhold contraceptive advice in accordance with his best medical judgment in the best interests of his patient." Earlier in that report, the House inserted the statement that "definite effort should be made to obtain consent from the minor's parents or legal guardian whenever possible."

Regarding maternal and infant care, the House adopted a report pointing out that "Application of recent advances in scientific knowledge and skills in the intensive care management of high-risk pregnant women and high-risk newborn infants will result in reduction of present maternal and infant mortality. A major contribution to such a program is the development of a centralized community (or regional) hospital-based newborn intensive care unit. Concentration of high-risk infant care programs in hospitals specially staffed and equipped to provide optimal care is a proven life-saving mechanism for infants at risk."

Concerned with the spread of venereal disease, the House resolved:

That medical societies be urged "to support education of patients and the public through more extensive and more imaginative use of all available



media and through school curricula"; that the AMA "reiterates its support and cooperation with the National Commission on Venereal Disease in order to hasten the control of these diseases"; and that the AMA "strengthen in every way possible research efforts toward the development of vaccines for the active immunization of our population against venereal disease."

On health education in schools, the House resolved to encourage state and local medical societies "to establish active liaison with their school systems in order to provide lectures and appropriate educational support regarding: personal hygiene, the effects of tobacco and drugs, the problem of medical quackery and the role of physicians in maintaining good health."

To increase patient safety in hospitals, the House resolved that "medical staffs be urged to form a staff committee to cooperate with administration and lend guidance in developing safety programs that will include the concepts of prevention, detection, and correction, and which will fully utilize the expertise of physicians and other members of the health care team."

Considering the use of assistants in medical practice, delegates resolved that "the physician may properly delegate technical procedures to an allied health worker" but affirmed the principle "that whatever privileges may at any time be granted either to allied health workers or to independent limited practitioners, by law or otherwise, such grant in no way circumscribes the physician's authority in that field and in no way restricts the practice of medicine by the physician."

### House Officers and Medical Students

The House commended "those county medical societies which have opened participation opportunities to House Officers" and recommended to county medical societies "that reduced membership dues be provided for House Staff members."

Delegates also resolved:

To request the Board of Directors of AMA-ERF "to investigate the feasibility of providing financial aid for the continuation and coordination of the SAMA-MECO Project" (Medical Education and Community Orientation).

To "urge that the Congress support increased Federal aid to medical students."

"That residency training in community hospitals is worthy of strong and continued support."

To encourage "individual state societies to promote community programs in their states to provide facilities or loan programs for students for which the

student agrees to return to the community after training."

That individual members of the AMA "assume sustaining membership in the Student American Medical Association."

And that the AMA "offer active support and counsel to the Student American Medical Association for their community health projects."

### Additional Actions and Events

Delegates adopted a 39-page report on Physician Manpower and Medical Education, prepared jointly by the Council on Medical Education and the Council on Health Manpower, with help from the Council on Medical Service.

They approved a progress report of the Board Committee on Professional Liability and filed for information an 89-page summary of Computer Systems in Medicine.

They adopted a Judicial Council report reaffirming the position "that the basic principles of a fair and objective hearing should always be accorded to the physician whose professional conduct is being reviewed. These basic guarantees are: a specific charge, adequate notice of hearing, the opportunity to be present and to hear the evidence, and to present a defense. These principles apply when the hearing body is a medical society tribunal or a hospital committee."

They adopted the report of the Council on Long Range Planning and Development which included these objectives for the AMA:

1. To maintain an active, viable organization representing the majority of physicians of the United States.
2. To serve as the central coordinating organization of medicine.
3. To serve as the representative of the medical profession in its relations with other health professions, industry, government, labor, consumers and other non-medical organizations.
4. To develop, stimulate and present scientific and professional programs and advances to the profession and public.
5. To continue its historic interest in all levels of medical education.
6. To assimilate recent medical graduates into the medical professional organizations.
7. To promote high standards of quality medical care.

LUCIEN R. PYLE, M.D., Topeka  
JOHN C. MITCHELL, M.D., Salina  
*AMA Delegates*

# Vox Dox

Roger D. Mason, M.D., President  
Nebraska State Medical Association

Dear Roger:

. . . I am glad to learn that you enjoyed the meeting in Topeka and I am sure it gave you insight into the workings of your neighbors to the south which in all probability are not very different from those in the Cornhusker state.

My only regret is that I had so little time to spend with you, but as I know you understand, I was heavily involved in many activities during the time in Topeka. . . .

Since we have established liaison with the Nebraska State Medical Association, I hope that it can be continued. I would especially like to invite you to one or two of our council meetings next year as an observer and, hopefully, a participant. Please let me know if you would be willing to come to Topeka for a meeting or two. I would also like to invite you in advance to attend the annual meeting next year.

Again, thank you for attending. Your comments at the reference committee meetings were most helpful. . . .

Sincerely,  
WILLIAM J. REALS, M.D.  
President  
Kansas Medical Society

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William J. Reals, M.D., President  
Kansas Medical Society

Dear Bill:

. . . There is certainly no reason for you to have any regrets during my stay at your annual meeting for I assure you I am well acquainted with the many commitments of an incoming state medical society president. My wife and I were both well taken care of and found your meeting both enjoyable and educational.

I assure you I would be most willing to attend one or two of your council meetings in Topeka though I would appreciate seven to ten days notice at least prior to the meeting. I am sure you realize I have many commitments in Nebraska to fulfill and this will help my scheduling considerably. I would certainly like to extend an invitation for you to attend our Fall Session of the Nebraska House of

Delegates in Kearney, October 22, 23 and 24. This is usually a day and a half meeting with no social functions and might likewise prove helpful to you.

Again, thank you very much for all your courtesies and I hope to see you at many other functions during the coming year.

Sincerely yours,  
ROGER D. MASON, M.D.  
President  
Nebraska State Medical Association

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## HORTICULTURAL THERAPY PROGRAM AT K-STATE

A new Kansas State University curriculum in horticultural therapy, to be offered by the department of horticulture and forestry in cooperation with the Menninger Foundation in Topeka, has been approved by the Kansas Board of Regents.

"For this new program we will broaden the current curriculum in horticulture to include 28 additional credits in psychology, sociology, family and child development, and art and design, as well as 15 credits of field study courses to be provided by the staff of Menninger Foundation," according to Dr. Ronald W. Campbell, head of the K-State department of horticulture and forestry in the College of Agriculture.

"Activity therapy is an important part of treatment in psychiatric hospitals, correctional institutions, and geriatric centers. Horticultural therapy students can involve patients not only in practical work in plants and plant production but also in floral arrangement and other areas allowing for individual development," he said.

The idea originated as a result of a survey of hospitals and clinics throughout the country taken by members of the Menninger Foundation staff. "This survey indicated a great demand for people trained in this area. To our knowledge, this is the first undergraduate program in horticultural therapy in the United States," Campbell said.

Students in the program will receive a bachelor of science degree in agriculture. Course requirements will include seven semesters of course work on the KSU campus and one semester of field study during the senior year at the Menninger Foundation.

*(Continued on page 374)*



KANSAS STATE DEPARTMENT OF HEALTH  
TOPEKA, KANSAS

Epidemiology & Disease Control Services—Registration & Health Statistics Services—Kansas Morbidity Incidence

Summary of Cases Reported in April, 1971 and 1970

<i>Diseases</i>	<i>April</i>			<i>January-April Inclusive</i>		
	<i>1971</i>	<i>1970</i>	<i>5-Year Median 1967-1971</i>	<i>1971</i>	<i>1970</i>	<i>5-Year Median 1967-1971</i>
Amebiasis .....	1	4	1	4	8	4
Aseptic meningitis .....	—	1	—	—	3	—
Brucellosis .....	—	—	—	1	—	—
Diphtheria .....	—	—	—	—	—	—
Encephalitis, prim., infect. ....	2	1	1	4	3	3
Encephalitis, post-infect. ....	1	—	—	1	—	—
Gonorrhea .....	473	496	363	2,093	2,032	1,464
Hepatitis, infectious .....	42	45	24	212	175	115
Measles (Rubeola) .....	336	5	8	869	45	*
Meningococcal meningitis .....	5	1	1	21	1	13
Mumps .....	132	40	*	228	88	*
Pertussis .....	—	—	—	—	—	—
Poliomyelitis .....	—	—	—	—	—	—
Rheumatic fever .....	—	—	—	1	1	1
Rubella (German Measles) .....	55	23	*	209	37	*
Salmonellosis .....	24	18	15	84	53	56
Scarlet fever .....	7	8	4	31	67	31
Shigellosis .....	65	8	3	448	23	19
Streptococcal infections .....	1,397	450	388	1,866	1,108	1,328
Syphilis .....	120	120	120	454	470	454
Tinea capitis .....	—	1	6	10	11	17
Tuberculosis .....	15	25	23	49	76	76
Tularemia .....	—	—	—	—	—	1
Typhoid fever .....	—	—	—	—	—	—

\* Statistics not available for 5-year median.

### TO DIAGNOSE GONORRHEA IN FEMALES—DO A CULTURE!

From January through April 1971, there were more reported cases of gonorrhea in Kansas than there were of measles, mumps, rubella, scarlet fever, and tuberculosis combined!

One of the reasons for the spiralling incidence of gonorrhea is the large reservoir of asymptomatic females. If we do not locate and eliminate this reservoir, the gonorrhea rate will continue to rise.

Two other factors contributing to the crises in gonorrhea are inadequate treatment schedules, such as Benzathine Penicillin G., and reliance upon gram stains to make a diagnosis in females.

Recommended treatment schedules are: Uncomplicated gonorrhea in men; aqueous procaine penicillin G., 2,400,000 units in one intramuscular injection.

Uncomplicated gonorrhea in women; aqueous procaine penicillin G., 4,800,000 units intramuscularly divided in two injection sites at one visit.

The Division of Epidemiology, V. D. Section, is calling on all physicians to include a culture for gonorrhea as part of routine physical examinations of females. The recommended procedure is as follows:

1. To diagnose gonorrhea in women, culture specimens should be obtained from the cervix and anal canal and inoculated on separate Thayer-Martin (TM) culture plates. The combination of typical colonies on TM selective medium, a positive oxidase reaction, and Gram-negative diplococcal morphology provides sufficient criteria for a diagnosis of gonorrhea.

2. For test-of-cure, culture specimens should be obtained from both the cervix and the anal canal,

(Continued on page 374)

# Woman's Auxiliary

## *Annie Goes to the AMA*

Did it really happen? Was I actually in the same room with President and Mrs. Nixon? Somehow the whole thing seems unreal, like a story on TV or in a magazine. Even the atmosphere of Atlantic City, so unlike that of Kansas, had an almost dreamlike quality.

In the first place there were people everywhere, all ages, all races, all the social strata. There was the WHO-O-O-SH of the surf pounding against the sandy beach in front of the boardwalk, the squeals of excited children as they let the foamy water rush over them. Then the quieter receding WH-U-u-u-u echoed like a recurring sigh as the ocean pulled itself back together again to prepare for another onslaught.

There were the familiar faces too . . . Jim Imboden, Oliver Ebel, Edith Lessenden, Jean Pierce, Lela May Young, Katie and Luke Pyle . . . and yep, even President Nixon. There was the gaggle of national and state auxiliary officers, very businesslike and efficient looking in summer sportswear. There was the lady from India strolling down the boardwalk in a gold and red silk sari; the college kids, boys and girls both, driving the motorized chairs up and down, up and down the boardwalk.

There was the dignified Chinese gentleman quietly inspecting a delicate porcelain statuette, remarking to the clerk how beautiful he thought it was. There were bikini clad girls, jeans clad boys, kids with dripping ice cream cones and kids with balloons.

Mixed with the happy clamor was the shout of the ballyhoo boys in the carnival booths blending with the rinky-tink music of the merry-go-rounds and the clatter of the ferris wheels and tilt-awhirls.

Evenings found bejeweled ladies, party dresses glittering, competing with brightly jacketed husbands, going here and there to antique auctions, state reunions or dinners. Something delicious to tempt the appetite was everywhere . . . fish, lobster, steak, wonderful candy . . . and special "down Jersey" fried chicken or chicken and dumplings.

History abounds in and around the city. The historic "Towne of Smithville" with the authentic shops, inn and mill all dating from 1779, bright and beautiful with new paint, wonderful gifts and antiques, is a marvelous place. Good food, good service, wonderful hospitals and authentic atmosphere all combine in such a pleasant manner that Annie went out there twice! The enormous, towering,

castle-like, ancient hotels border the beach, their stately dignity contrasting with the new, modern, and maybe more efficient, motel additions towards town.

Meetings with national officers and chairmen told us of the new construction of the committees at the national level, making them less confusing to the counties and states. All the committees presently functioning have been restructured to prevent overlapping and the resulting indecision as to "what goes where and to whom." Nothing has been left out, however.

Two main divisions have been formed, the Auxiliary Activities Division and the Community Health Activities Division. The Auxiliary Activities Division consists of four areas: AMA-ERF, Health Manpower, Legislation and IHA. The Community Health Activities Division includes all aspects of education for the public, such as *health education programs* for parents, teachers and teenagers, nutrition and mental health. It also lists health education for survival, safety environment, family planning, and physical fitness. The *volunteer health services* are *action* programs and include those on the above health education areas, plus volunteer services in areas of children and youth (Gems, block mothers, audio and visual defect detection, special education for exceptional children) and services for the aging and homebound (homemaker services, meals, tele-care and transportation). Also included in this category are medical facilities and services for general hospital auxiliary or Gray Lady work, blood donor programs, and areas of mental health. Environmental programs include safety and ecology projects.

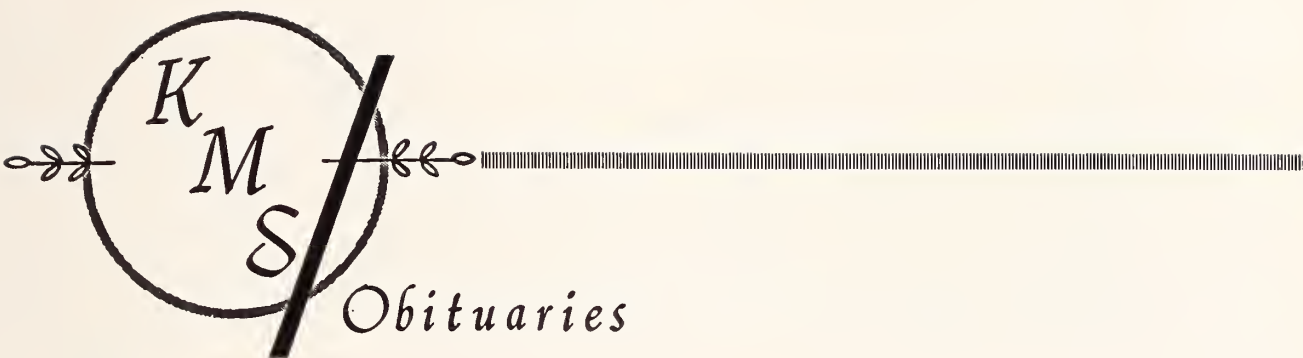
In other words, we have tried to show exactly what programs are designed to assist the medical profession as such and those we feel are designed to help our communities and ourselves in education and action programs.

We had all the assistance anyone could ask for . . . packets, pamphlets, displays, lectures, films. You name it, they had it ready for us to take home, either mentally or physically. Fact is, Annie's luggage got so heavy with books and papers that she almost couldn't lift it. Her brain is spinning, believe me.

We had wonderful combined social and work sessions too. Tempting luncheons were followed by good speakers, including AMA President Dr. Walter C. Bornemeier, AMA-ERF Director Robert A. En-

*(Continued on page 374)*





FRED D. LOSE, M.D.

Dr. Fred D. Lose, 87, who had practiced medicine in Madison since 1906, died June 19, 1971, in the University of Kansas Medical Center.

Dr. Lose was born in Osage County, Kansas, on June 19, 1884, and moved with his family to Madison several years later. He was a member of the first class to graduate from the four-year course at the University of Kansas School of Medicine in 1906. After graduation, he returned to Madison to establish his medical practice.

Survivors include a son and daughter.

Memorial contributions may be made to the Dr. Fred and Anne Lose Scholarship Fund, University of Kansas Medical Center, Kansas City, Kansas.

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MARTIN J. RUCKER, M.D.

Dr. Martin Rucker, Sabetha, died July 6, 1971, in a Topeka hospital. He was 63 years old.

He was born November 8, 1907, at Steinauer, Nebraska, and had lived in Sabetha 35 years. He was graduated from the University of Nebraska School of Medicine in 1935 and moved to Sabetha in 1936 to begin his medical practice. In 1937, he graduated from the Chicago Ear, Eye, Nose and Throat Hospital School of Medicine, and from the Ratcliff Clinic School at Oxford, England in 1945.

Surviving Dr. Rucker are his wife and son.

Memorial contributions may be made in care of the Popkess Mortuary, Sabetha, Kansas.

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HENRY D. THOMAS, M.D.

Dr. Henry D. Thomas, 88, Belleville, died on May 26, 1971.

Dr. Thomas was born in Washington County, Iowa, on December 21, 1882. After graduation from the University of Iowa School of Medicine in 1910, he moved to Belleville to practice medicine. He was active in civic organizations and organized the first Boy Scout troop in Belleville, serving as scout master for 33 years. He served as Republic County coroner for over 30 years.

Dr. Thomas is survived by two daughters and a son.

## Horticultural Therapy

(Continued from page 370)

"The semester at Menninger's should help the student therapist understand how plants and gardening can be a therapeutic tool in the treatment process of a patient," according to Rhea McCandliss, horticultural therapist at the Menninger Foundation. "During field study, the student will apply the skills and knowledge gained in classroom work in the treatment setting. Further use of training and skills depends on the ingenuity and imagination of the student, of course," she explained.

"The curriculum is people-oriented, without a doubt," Campbell commented.

The K-State department will enroll students immediately in the curriculum with the first seniors possibly taking field study next spring. Several students already enrolled in horticulture at KSU will change into the new curriculum, he said, picking up the necessary social science and art courses required so they will be ready for field study by next spring.

## Auxiliary Annie

(Continued from page 372)

low (with a walloping check of \$550,927.01 presented to him from our combined auxiliaries), and the Honorable Patricia Reilly Hitt, Assistant Secretary, Community Field Service, HEW.

The state presidents all came through, too, with reports of successful projects during the past year, giving all of us ideas for the future. Kansas gals did you proud, boys. . . . They received special mention, too, for the "Walk for Mankind" in Wichita.

Yes, it was a good convention . . . fact and fun. The AMA meeting can be an exciting experience for a Kansas country girl like

AUXILIARY ANNIE.

## Gonorrhea in Females

(Continued from page 371)

inoculated on TM medium, and interpreted according to the combination of criteria presented in Item 1.

### NOT RECOMMENDED

1. Gram-stained or fluorescent antibody stained direct smears are not recommended for the diagnosis of gonorrhea in women except as an adjunct to the cultures.

2. The delayed fluorescent antibody technique is not recommended for the diagnosis of gonorrhea.

3. Neither fluorescent antibody stained direct smears

nor the delayed fluorescent antibody procedure is recommended as a test-of-cure in women.

Physicians are also urged to utilize the Transgrow system for transport and growth of cultures. The Transgrow system is a simple, one-step method for transporting and growing pathogenic *Neisseria* for identification; this system eliminates the necessity for transferring specimens to culture plates upon arrival at the laboratory.

Preliminary studies conducted by the Venereal Disease Research Laboratory and other laboratories show that a high percentage of cultures that were positive on Thayer-Martin plates, incubated soon after inoculation, were also positive on Transgrow after 48-96 hours in transport to the laboratory. It appears that an even higher recovery rate can be attained if the inoculated bottles can be incubated at 36 C overnight before being mailed.

For further information, contact: Kansas State Department of Health, Venereal Disease Section, Fifth Floor, State Office Building, Topeka, Kansas 66612, (913) 296-3782.

## Along the Bookshelf

### Clendening Medical Library

### RECENT ACQUISITIONS

- Alpers, Bernard Jacob. Clinical neurology. Philadelphia, Davis, 1971.
- AMA drug evaluations. Chicago, American Medical Association.
- Boorman, Kathleen Ethel. An introduction to blood group serology; theory, techniques, practical applications. London, Churchill, 1970.
- Bowen, Angela Joyce M. The diabetic gourmet; a doctor's guide for the diabetic with recipes and information applicable for good eating habits for the entire family. New York, Harper & Row, 1970.
- Conn, Hadley L. Cardiac and vascular diseases. Philadelphia, Lea & Febiger, 1971.
- Cutler, Ann. Four minutes to life. New York, Cowles, 1970.
- Gardner, Warren H. Laryngectomy speech and rehabilitation. Springfield, Ill., Thomas, 1971.
- Holdsworth, William Goldthorpe. Cleft lip and palate. New York, Grune & Stratton, 1970.
- Lauder, Edmund. Self-help for the laryngectomy. San Antonio, Texas, 1969.
- Livingston, Robert Bur. Single agents in cancer chemotherapy. New York, IFI/Plenum, 1970.
- MacBryde, Cyril Mitchell. Signs and symptoms; applied pathologic physiology and clinical interpretation. Philadelphia, Lippincott, 1970.



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Journal  
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SEPTEMBER  
1971

VOL. LXXII  
NO. IX



# Patients fell asleep quick

Dalmane (flurazepam HCl) 30 mg reduced awake time—both before and after falling asleep - by fifty percent of pretreatment values in patients with insomnia.<sup>1,2</sup>

Two sleep laboratory studies recently confirmed findings of earlier studies of this type, namely, that Dalmane 30 mg was effective in patients who had trouble falling asleep, staying asleep or both. One 30-mg capsule of Dalmane usually induced sleep within 22 minutes, decreased the number of awakenings and the wake time after the onset of sleep, and provided 7 to 8 hours of sleep without need to repeat dosage during the night.

These studies utilized identical protocols and included eight insomniac patients. Sleep laboratory measurements in a limited number of patients are derived from all-night electroencephalographic, electro-oculographic and electromyographic tracings. Unlike traditional methods of evaluation, they are quantitative, reproducible and projectable to large numbers of subjects.

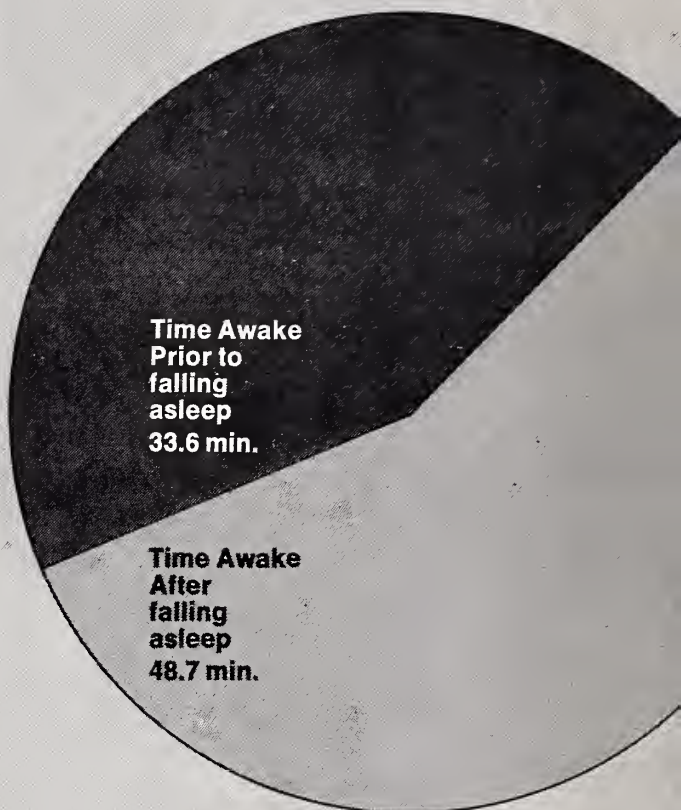
Results shown represent average values in all subjects for the three consecutive nights of placebo administration prior to Dalmane therapy and the seven consecutive nights on Dalmane 30 mg.

Dalmane is also relatively safe, as reported in clinical studies. Instances of morning "hang-over" have been relatively infrequent; paradoxical reactions (excitement) and hypotension have been rare. Dizziness, drowsiness, lightheadedness and the like were the side effects noted most frequently, particularly in the elderly or debilitated. (An initial dose of Dalmane 15 mg should be prescribed for these patients.)

**References:** 1. Frost, J. D., Jr.: "A System for Automatically Analyzing Sleep," Scientific Exhibit presented at Clinical Convention, A.M.A., Boston, Nov. 29-Dec. 2, 1970, and Aerospace M.A., Houston, April 26-29, 1971.

2. Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley, N.J.

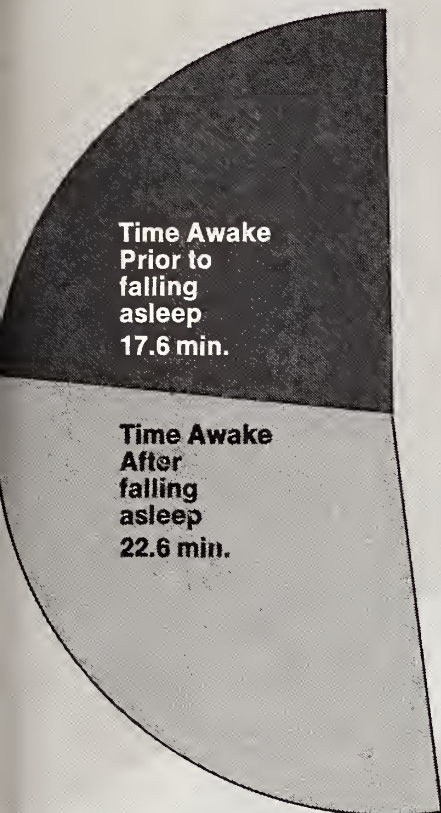
Before  
Dalmane  
(flurazepam HCl)





# and slept through the night

On  
Dalmane  
(flurazepam HCl)



sleep laboratory measurements in cited studies

	Before Dalmane	On Dalmane
Time required to fall asleep	33.6 min.	17.6 min.
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# The JOURNAL of the KANSAS MEDICAL SOCIETY

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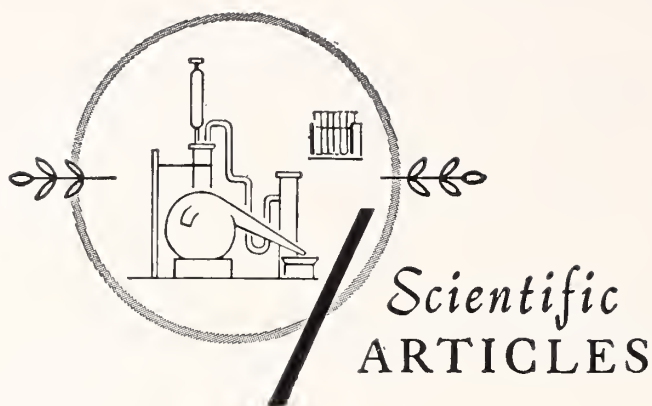
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*Annual Issue*

# Kansas Chapter American College of Surgeons

Printed in this issue are five of the papers presented at the annual meeting of the Kansas Chapter, American College of Surgeons, held in Topeka on November 22, 1970.



# Hand Tumors

## *Primary Malignant Tumors of the Hand*

**TOM E. KENDALL, M.D.,** *Wichita;* **DAVID W. ROBINSON, M.D.,** *and*  
**FRANK W. MASTERS, M.D.,** *Kansas City, Kansas*

PRIMARY MALIGNANT TUMORS of the hand, although unusual, may present varied and often complex clinical problems. Since treatment depends upon cell type and the degree of activity inherent in the tumor rather than its location, a wide range of incidence and methods of management have been reported. It is our purpose to review primary malignancies of the hand seen at the University of Kansas Medical Center during the past 20 years. The cell type, incidence, methods of management and long term results were compared and form the basis of this report.

### **Review of Clinical Material**

In the 20-year period from January 1947 through December 1967, 73 patients were admitted to the University of Kansas Medical Center for treatment of 78 separate primary malignancies of the hand. A wide variety of cell types occurred which will be discussed separately (*Table 1*).

### **Squamous Cell Carcinoma**

In this series, squamous cell carcinoma proved to be the most common primary malignant tumor of the hand comprising 78 per cent of all malignancies

seen. This tumor occurred more frequently in males (5:1), and the age distribution is similar to that noted for squamous cell carcinoma of the skin seen in other areas of the body (*Table 2*). Fifteen patients gave a positive history of x-ray exposure or had evidence of chronic radiodermatitis. In five

---

**A series of 73 patients with 78 malignant tumors of the hand has been surveyed. The most common tumor encountered was squamous cell carcinoma.**

**Surgical excision, with skin graft if necessary, is recommended for local treatment.**

**Node dissection is indicated if nodes are palpable. Prophylactic node dissection should have limited application based on the type of tumor, frequency of metastases and condition of the patient.**

**Radiation therapy should be used conservatively and as an alternative method for special cases.**

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other cases, trauma or chemicals were considered to be possible etiologic agents.

Treatment of these malignancies consisted of excision, amputation, node dissection and irradiation

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Presented at the annual meeting of the Kansas Chapter, American College of Surgeons, November 22, 1970, Topeka, Kansas.



TABLE 1  
TUMOR ENCOUNTERED AT K.U.M.C. 1947-67

Type of Tumor	No.	%
Squamous cell carcinoma	61	78
Basal cell carcinoma	8	10
Baso-squamous cell carcinoma	2	2
Carcinoma-in-situ	1	1
Melanoma (amelanotic)	2	2
Melanoma (malignant)	1	1
Chondrosarcoma	2	2
Fibrosarcoma	1	1
	78	

therapy, depending upon the local extent of involvement and the presence or absence of regional or distant metastases. Surgical removal plus regional node dissection, when indicated, were employed when the tumor was deemed curable. Radiation therapy was reserved for inoperable situations where temporary palliation was indicated (Table 3).

The results of treatment revealed that 34 patients are dead, of which four died of their malignant disease process. Twenty-two are living, seven of which have had or now have recurrence. Twenty-six patients survived tumor-free five years or more from the time of initial diagnosis (Table 4).

TABLE 2  
AGE OF PATIENT

Years	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
Number	6	4	4	4	9	10	6	8

**Basal Cell Carcinoma**

Eight cases of primary basal cell carcinoma occurred (10 per cent of the total series). All were males with an average age of 70 years. Local excision was employed in each instance; although four patients have died of intercurrent disease processes, recurrence of the primary tumor has not been reported.

**Baso-Squamous Carcinoma**

Two patients treated by local excision proved to have baso-squamous cell carcinoma. Both individuals were male and one gave a history of exposure to

irradiation. Each has survived more than five years free of tumor.

**Melanoma**

Malignant melanoma occurred in three patients. Two presented as subungual amelanotic melanoma and were treated by ray amputation. Both patients died with disseminated metastases within eight years from the time of original diagnosis. The remaining patient presented with a malignant melanoma of the dorsum of the hand which was treated by wide local excision and axillary node dissection, and is living without evidence of recurrence six years later.

TABLE 3  
SQUAMOUS CELL CARCINOMA TREATMENT

Number of patients	56
Treatments:	
Excision	42
Amputation	15
Node Dissection	9
X-ray	12

**Chondrosarcoma**

Chondrosarcoma was seen twice. Both cases involved the index finger. One patient was treated by local excision, and the other by ray amputation. Both are living and free of tumor.

**Fibrosarcoma**

Fibrosarcoma occurred only once and presented as a massive swelling of the hand. The treatment consisted of biopsy followed by amputation of the arm above the elbow. The disease was progressive, and the patient died of disseminated metastases within one year.

TABLE 4  
RESULTS OF TREATMENT

Number of patients dead	34
Dead with disease	4
Number of patients alive	22
Alive with disease	7
Number of patients surviving five years or more	26

## Discussion

The vast majority of tumors of the hand are benign. Butler<sup>1</sup> reported 437 cases of which 24 per cent were malignant. Pack<sup>2</sup> reported 389 cases with 59 per cent showing malignant change. From these and other studies, it is apparent that the incidence of malignancy of the hand varies greatly.<sup>3, 5, 7</sup> Although the etiology of tumors of the hand is not clear, heredity, disturbance of metabolism, radiation and trauma all have been cited as significant factors.<sup>1</sup>

Most squamous cell carcinomas<sup>1-7</sup> occur on the dorsum of the fingers or the hand, and the palm is rarely involved (*Figure 1*). The lesion usually begins as a superficial ulcer which gradually invades the deeper structures. These tumors tend to invade and metastasize more rapidly if located over moving parts such as joints. Johnson and Ackerman feel that the depth of invasion relative to the coiled portion of the sweat gland is the most important factor influencing metastases.<sup>4</sup>



*Figure 1.* A typical fungating squamous cell carcinoma of the index finger treated by ray amputation.

Local excision with a skin graft is indicated if the lesion is superficial. When invasion of the deeper structures has occurred, amputation of a digit or the extremity is the treatment of choice. Regional node dissection should be performed only if there are palpable nodes at the epitrochlear or axillary level. "Prophylactic" node dissection in the absence of nodal involvement is not indicated. X-ray treatment should be used with caution and all factors such as age, condition of the patient, and type and extent of tumor must be considered.

Basal cell carcinoma, carcinoma-in-situ, and basosquamous cell carcinoma are all of low malignant potential (*Figure 2*). These tumors usually occur as a result of prolonged exposure to sunlight and wind. People who have been exposed to heavy doses of x-ray also tend to develop these tumors. Since basal cell carcinoma almost never occurs on the palm of



*Figure 2.* A basal cell carcinoma of the dorsum of the hand occurring in an area of previous irradiation therapy.

the hand, all can be treated by wide local excision and graft, and amputation is rarely necessary.

Amelanotic melanoma of the nail bed<sup>1-3, 7</sup> is difficult to recognize early and is frequently confused with an infectious process. Treatment consists of early biopsy followed by radical amputation of the involved digit, and simultaneous node dissection combined with perfusion when regional nodes are palpable. If no regional adenopathy is detectable, prophylactic node dissection plus perfusion two or four weeks following amputation is a useful adjunct in the management of this malignancy. The prognosis is more favorable with melanoma of the hand than with melanoma elsewhere.

Fibrosarcoma and chondrosarcoma both arise from deep structures. Fibrosarcoma<sup>1, 3, 7</sup> usually presents as a deep, fixed, hard swelling of the hand. Lymphatic spread is less common, but occurs early and metastases *via* the blood stream to the lung are common. Once the diagnosis has been established, radical amputation of the involved part is the treatment of choice (*Figure 3*). Chondrosarcoma<sup>1, 3, 7</sup> usually arises from a known enchondroma. It grows slowly for years without discomfort, then may suddenly en-



*Figure 3.* Massive fibrosarcoma of the palm treated by mid-forearm amputation.



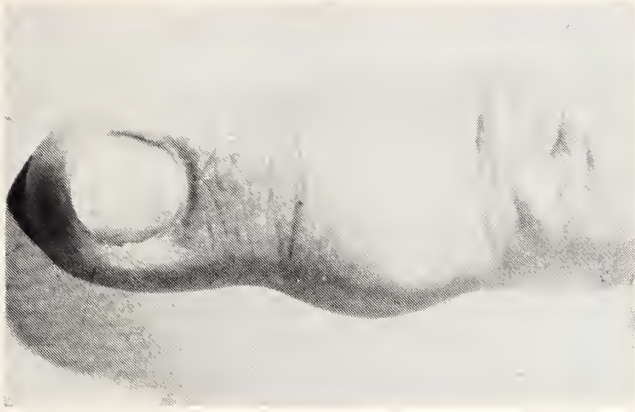


Figure 4a. Slowly growing chondrosarcoma of the index finger which began as a small nodule.

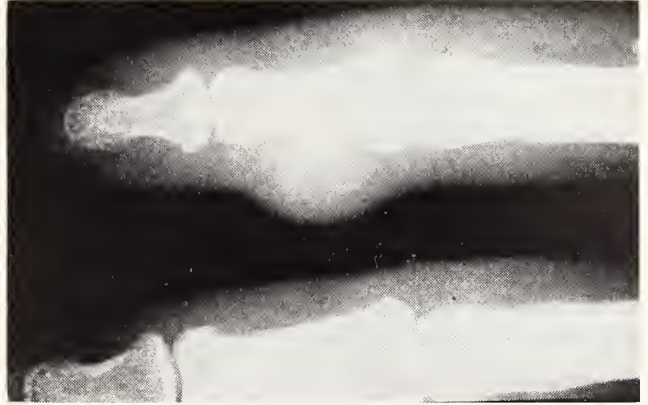


Figure 4b. X-ray of the finger showing the periosteal reaction secondary to chondrosarcoma.

large and cause pain (Figure 4a, b, c). Treatment poses a problem. If left alone, the tumor will grow slowly and only invade locally. If incompletely removed, the tumor may grow rapidly and metastases will follow. In the hand, limited radical resection, such as ray amputation, is usually curative.

## References

1. Butler, E. D.: Tumors of the hand. A ten year survey and report of 437 cases. *Am. J. of Surg.*, 100:293, 1960.
2. Pack, G. T.: *Tumors of the Hands and Feet*. St. Louis, C. V. Mosby Co., 1939.
3. Bunnell, S., and Boyes, J.: *Surgery of the Hand*. Philadelphia, J. P. Lippincott Co., 4th Edition, 1964.
4. Johnson, R. E., and Ackerman, L. V.: Epidermoid carcinoma of the hand. *Cancer*, 3:657, 1950.
5. Clifford, R. H., and Kelly, A. P., Jr.: Primary malignant tumors. *Pl. and Recon. Surg.*, 15:227, 1955.
6. Clark, P. J., and Johnson, T. M.: Epidermoid carcinoma of the hand. *J. Kan. Med. Soc.*, 49:100, 1948.
7. Flynn, J. E.: *Hand Surgery*. Baltimore, Williams & Wilkins, 1966.



Figure 4c. Two years following ray amputation of the index finger.

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# Subdiaphragmatic Abscess

## Ten Years' Experience With Subdiaphragmatic Abscess in a Community Hospital

GEORGE J. FARHA, M.D., F.A.C.S.,\* and  
J. K. ROBERTSON, M.D.,\*\* Wichita

### Introduction

BECAUSE OF AN occasional individual acquaintance with subdiaphragmatic space abscess, unawareness of the clinical pathological picture may exist.

Subdiaphragmatic space abscess includes subphrenic space abscess and subhepatic space abscess (*Table 1*).

The subdiaphragmatic space as initially described by Barnard<sup>2</sup> included that area bounded superiorly by the diaphragm and inferiorly by the transverse mesocolon. Boyd<sup>8</sup> described only four spaces in contrast to Barnard's original six spaces. Subdivisions were later added by other authors. On the right there are only two spaces, the right subphrenic and the right subhepatic space. These divisions are created by the dorsal position of the coronary ligament. Subdivisions of these potential compartments do not an-

arately occurring components of the entity, subdiaphragmatic abscess. These entities present with definite clinical diagnostic differences.

**Thirty cases of subdiaphragmatic abscess occurring between 1959-1969 are presented. The anatomy, etiology, and treatment of subphrenic and subhepatic abscess has been presented with particular attention to the division of these entities regarding diagnostic and clinical differences in their recognition.**

TABLE 1  
SUBDIAPHRAGMATIC SPACES

1. Subphrenic Space
A. Right
B. Left
2. Subhepatic Space
A. Right
B. Left
C. Lesser Sac

atomically exist; however, the inflammatory process may produce loculations, hence giving one an erroneous impression. On the left, there is a combined subphrenic and subhepatic space. The lesser sac is considered a subhepatic space.

The world literature recognizes subphrenic and subhepatic abscess synonymous with subphrenic abscess. This paper, however, will discuss subphrenic (in contact with the diaphragm), and subhepatic (no contact with the diaphragm) abscesses as sep-

### Clinical Material

Thirty cases of subdiaphragmatic abscess occurring between 1959 and 1969 were reviewed. The diagnosis was made by either surgical exploration or autopsy. Suspected but unproven (nonoperative) cases were omitted.

Twenty-four subphrenic abscesses and six subhepatic abscesses were encountered in ages ranging from 58 to 81 years. Seven patients with subphrenic abscess expired. No deaths occurred in patients with subhepatic abscess. The duration of symptoms ranged from two weeks to four years following the precipitating surgical procedure.

Bilateral subphrenic abscess occurred in two patients while left subphrenic abscess was noted in only five. Combination of subhepatic and subphrenic abscess occurred in only two patients.

### Pathogenesis

Subphrenic and subhepatic abscesses most commonly follow either an intra-abdominal catastrophe or an intra-abdominal operation. As demonstrated by other studies,<sup>4, 10</sup> perforated appendix proved in this series to be an uncommon cause (one case). This case was characterized by rupture of the appendix retroperitoneally with the development of subphrenic abscess (*Figure 1*).

The prevalence of right upper quadrant opera-

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Figure 1. Barium enema demonstrating sinus tract from ruptured appendix with retrograde filling of right subphrenic abscess.

tions is directly related to the frequency of pathologic conditions arising in this anatomic area. Hepatobiliary procedures accounted for ten cases of subphrenic abscess, whereas 66 per cent of subhepatic abscesses were related to cholecystectomy even following apparent adequate drainage. Only one subphrenic abscess was secondary to rupture of a hepatic abscess which proved to be of amoebic etiology. Table 2 summarizes the etiologic factors.

In recent years culture studies have been more readily performed. In only six cases was bacteriologic evaluation not obtained. Staphylococcus aureus was the most commonly isolated organism with E. coli next in frequency. Various other organisms were cultured as depicted in Table 3. Seven cases had combinations of organisms (two or more). Five cases had negative cultures after 48 hours.

Studies by Carter,<sup>10</sup> Bondi,<sup>6</sup> Sherman,<sup>24</sup> and Johnson<sup>13</sup> indicated E. coli was the primary causative organism followed by staphylococcus aureus and streptococcus species. However, staphylococcus aureus has increased almost two-fold since the advent of the antibiotic era.

Clinical Pathology

With the exception of x-ray changes and chest signs, subphrenic and subhepatic abscesses present with very similar clinical signs and symptoms, as characterized in Table 4.

TABLE 2  
OPERATIVE PROCEDURES AND/OR  
PRECIPITATING FACTORS IN THE  
DEVELOPMENT OF SUBDIAPHRAGMATIC  
ABSCESS

	<i>Subphrenic</i>	<i>Subhepatic</i>
Cholecystectomy .....	7	4
Perforated peptic ulcers .....	1	1
Hepatic trauma (laceration or resection) .....	2	0
Gastrectomy for peptic ulcer ...	2	0
Gastrectomy with splenectomy for gastric carcinoma .....	2	0
Total gastrectomy without splenectomy esophagogastrotomy .....	1	0
Carcinoma of gallbladder .....	1	0
Pancreaticoduodenectomy .....	0	1
Perforated duodenal diverticulum	1	0
Rupture of amoebic hepatic abscess .....	1	0
Hysterectomy with pelvic abscess	1	0
Esophageal hiatus herniorrhaphy	1	0
Rupture retrocecal appendix ...	1	0
Recurrent subphrenic (incomplete drainage) .....	1	0
Colectomy (Ca R colon) .....	1	0
Perforated sigmoid colon .....	1	0
Biopsy left upper quadrant lesion	1	0

TABLE 3  
ORGANISMS ASSOCIATED WITH  
CLINICAL INFECTION

<i>Organism</i>	<i>1959-1969</i>	
	<i>Subphrenic</i>	<i>Subhepatic</i>
Staphylococcus aureus .....	9	2
E. Coli .....	4	2
Aerobacter aerogenes .....	2	1
Beta hemolytic streptococcus ...	2	0
Pseudomonas aeruginosa .....	1	0
Proteus mirabilis .....	1	0
Citrobacter species .....	1	0
Anaerobic species .....	1	0
Group C streptococcus .....	1	1
Clostridium perfringens .....	0	1
Clostridium sporogenes .....	0	1
No growth .....	4	1
No cultures obtained .....	6	0
Incidence of combined organisms (2 or more)	5	2

TABLE 4  
SIGNS, SYMPTOMS AND PHYSICAL  
FINDINGS ASSOCIATED WITH  
SUBDIAPHRAGMATIC ABSCESS

	<i>Subphrenic</i> (24 cases)	<i>Subhepatic</i> (6 cases)
Fever and/or chills .....	24	6
Leukocytosis (—12,000) .....	23	5
Pain .....	16	3
Tenderness R.U.Q. Abdomen ..	5	4
Hepatomegaly (or displacement downward) .....	3	0
Shoulder pain .....	3	1
Weight loss .....	2	1
Nausea and/or vomiting .....	2	0
Mass (R.U.Q.) .....	1	1
Malaise .....	1	1
Singultus .....	1	1

Fever, with or without chills and sweats, was present in all cases. One case of each entity did not present with leukocytosis (12,000 or greater). Pain, with or without abdominal tenderness, was a frequent symptom. Shoulder referral of pain is occasionally seen and may be a helpful symptom in the



Figure 2. Typical radiographic appearance in a case of right subphrenic abscess.

diagnosis of subphrenic abscess. Edema of the sub-costal area or lower chest wall was not observed in these cases. A palpably enlarged liver was noted in three cases of subphrenic abscess; however, this finding was not confirmed in these cases at operation. Production of purulent sputum in association with subphrenic abscess may represent extension through the diaphragm with bronchopulmonary fistula. Other signs and symptoms observed are indicated in *Table 4*. Higgins and Lemons<sup>17</sup> in 1929 demonstrated that lymphatic communication through the diaphragm occurs in over 80 per cent of cases. Lymphatic drainage from the liver, biliary tract, duodenum, and right abdominal cavity spreads through the right diaphragm to the subpleural lymphatics. Pleural effusion may develop because of subpleural lymphatic change. Hypoventilation of the lungs occurs with retention of secretions. Plugging may develop and atelectasis ensues. Pneumonia may be present. These physiologic

TABLE 5  
RADIOGRAPHIC SIGNS ASSOCIATED WITH  
SUBDIAPHRAGMATIC ABSCESS

<i>Sign</i>	<i>Subphrenic</i>	<i>Subhepatic</i>
Elevated diaphragm .....	12	1
Pleural effusion .....	10	0
Blunting of costophrenic angle	6	0
Air fluid level below diaphragm	6	0
Atelectasis .....	5	0

changes account for the radiographic findings (*Figure 2*), in our cases indicated in *Table 5*. Subdiaphragmatic gas (gas within an abscess cavity) is not a constant finding (6 cases), and may be unreliable because of frequent ruptured viscus or recent intra-abdominal operative procedures. Free air may persist as long as three weeks after abdominal operation and confuse the diagnosis. A definite diagnosis is made with air fluid level in an abscess cavity (*Figure 3*).

Diagnosis and Treatment

Diagnosis is dependent upon the recognition of a combination of signs, symptoms, laboratory and radiologic examinations, and occasional special procedures. The laboratory may not offer significant diagnostic aid. Specific diagnostic tests are not contributory. X-rays are mandatory. Abdominal films may be contributory. In the case of draining abdominal fistula, fistulography is imperative. Barium studies are important to diagnosis in addition to intravenous





Figure 3. Radiographic appearance of an air fluid level in a right subphrenic abscess. Note associated radiographic findings associated with reactive pleural change.

pyelography in the case of retroperitoneal subphrenic abscess (Figure 1). Left subphrenic abscesses may be recognized more readily by organ displacement demonstrated by x-ray studies. Left-sided subphrenic abscesses generally present as other intra-abdominal abscesses without the symptoms of the thoraco-abdominal complex.

Definitive treatment of a subphrenic abscess employs drainage through one of three basic approaches:

1. Extraperitoneal, which includes an anterior or posterior approach.
2. Transperitoneal.
3. Transpleural.

Table 6 summarizes the approaches utilized in this series of patients.

Nather and Ochsner,<sup>20</sup> in 1923, described the 12th rib resection approach through the bed of the 12th rib. This approach is satisfactory for right subhepatic and posteriorly placed right subphrenic abscesses. If the abscess is more anterior, access through this incision cannot be obtained.

Clairmont and Ramsey in 1905 described another extraperitoneal approach through an anterior subcostal extraperitoneal entrance. The majority of left subphrenic abscesses can be drained from this approach.

TABLE 6  
OPERATIVE DRAINAGE PROCEDURES

Approach—Incision	Subphrenic	Subhepatic
Anterior (trans peritoneal)		
Subcostal .....	4	3
Paramedian .....	7	3
Posterior (extra peritoneal)		
12th rib resection .....	6	0
11th rib resection .....	2	0
9th rib resection .....	1	0
Incision through intercostal space .....	1	0

The transperitoneal subcostal incision is satisfactory for left sided lesions or subhepatic abscesses in association with subphrenic abscesses.

The transpleural approach described by Trendelenberg in 1883 has been advocated by Boyd. Fear of pleural contamination precludes uniform acceptance of this method. We have had no experience with this method.

### Complications

Five deaths are reported as indicated in Table 7.

Complications associated with subdiaphragmatic abscess are usually in contiguous structures or organs from which the abscess arises or secondarily involves (Table 8). Bronchopulmonary fistula is an uncommon complication associated with rupture of an abscess through the diaphragm into the lung parenchyma with spontaneous drainage via the bronchopulmonary route. Pneumothorax may occur inadvertently following the posterior 12th rib approach.

External fistula occurs frequently if a drainage tract is accessible. Internal fistula is a late delayed complication which is an uncommon problem.

Recurrent abscess may present a problem if inadequate drainage procedures are instituted. This

TABLE 7  
PRIMARY CONDITIONS ASSOCIATED WITH SUBPHRENIC ABSCESS FOUND AT AUTOPSY

	Cases
Chronic lymphocytic leukemia .....	1
Adenocarcinoma of the stomach .....	2
Mesenteric thrombosis with gangrene .....	1
Cholelithiasis with stone impaction .....	1
Carcinoma gallbladder .....	1
Pulmonary embolus .....	1

TABLE 8  
COMPLICATIONS ASSOCIATED WITH  
SUBDIAPHRAGMATIC ABSCESS

	Subphrenic Cases	Subhepatic Cases
Bronchopulmonary fistula . . . . .	1	0
Abscess-cutaneous fistula . . . . .	1	0
Pneumothorax associated with drainage . . . . .	1	0
Biliary cutaneous fistula . . . . .	0	1
Recurrent abscess . . . . .	1	0
Small bowel obstruction . . . . .	0	1

may more frequently be associated with failure to completely break up a loculated abscess.

Bowel obstruction is a complication associated with entrapment of contiguous bowel in an inflammatory mass or involvement of the bowel as a wall of the abscess.

Numerous other complications may occur and are specific for the clinical situation and for the location of the lesion.

References

1. Acinapura, A. J.; Kostecki, R. J.; Becker, M. M. and Spencer, F. C.: Chronic subphrenic abscess. *Amer. J. Surg.* 115:691-694. May, 1968.

2. Barnard, H. L.: An address on surgical aspects of subphrenic abscess; delivered before the Surgical Section of the Royal Society of Medicine, January 14, 1907. *Brit. Med. J.* 1:429-436. February 22, 1908.

3. Barnard, H. L.: An address on surgical aspects of subphrenic abscess. *Brit. Med. J.* 1:371-377. February 15, 1908.

4. Dineen, R. and McSherry, C. K.: Subdiaphragmatic abscess. *American J. Surg.* 103:618-623. May, 1962.

5. Bodon, R. and Holzwasser, G. R.: The localization of right subphrenic abscess with liver scan. *Surg., Gynec. Obstet.* 119:601-602.

6. Bondi, Frank and Erickson, E. W.: Current concepts on subphrenic abscess. *Amer. J. Surg.* 107:614-619. April, 1964.

7. Boyd, D. P.: Annual discourse, "The Subphrenic Spaces and the Emperor's New Robes." *New Eng. J. Med.* 275:911-917. October 27, 1966.

8. Boyd, D. P.: The anatomy and pathology of the subphrenic abscess. *Surg. Clin. N. Amer.* 38:619. June, 1958.

9. Boyd, D. P.: The intrathoracic complications of subphrenic abscess. *J. Thorac. Cardivas. Surg.* 38:771-779. December, 1959.

10. Carter, R. and Brewer, L. A. P.: Subphrenic abscess: A thoracoabdominal complex. *Amer. J. Surg.* 108:165. 1964.

11. Davis, C. E., Jr.; VanHorn, C. N.; Fraizer, A. B.; Aquilino, Dizon: Subphrenic space infection-reassessment. *Ann. Surg.* 168:1004-1009, December, 1968.

12. Harley, H. R. S.: Subphrenic abscess. *Thorax.* 4:1-29. 1949.

13. Johnson, P. H.: Chest roentgen findings of subdiaphragmatic abscess. *Amer. J. Roentgen.* 105:584. 1968.

14. Kahn, A. M. and Weitzman, J. J.: Subphrenic and subhepatic abscess in the pediatric patient. *J. Pediat. Surg.* 4:256. 1969.

15. Lemon, W. S. and Higgins, G. M.: Lymphatic absorption of particulate matter through the normal and paralyzed diaphragm: An experimental study. *Amer. J. Med. Sci.* 178:536-547. 1929.

16. Mason, Lockert: Subphrenic abscess: Report of a case with fistulous connections to the stomach, colon, and bronchus. *Amer. Surg.* 31:278-280. April, 1965.

17. Miller, W. T. and Talman, E. A.: Subphrenic abscess. *Amer. J. Roentgen.* 101:961-969. December, 1967.

18. Mitchell, G. A. G.: The spread of acute interperitoneal effusions. *Brit. J. Surg.* 28:291-313. 1940.

19. Moore, H. Denny: Subphrenic abscess. *Ann. Surg.* 158:240-248. August, 1963.

20. Nather, C. and Ochsner, A.; Alton, E. W.: Retroperitoneal operation for subphrenic abscess. *Surg., Gynec. Obstet.* 37:665-673, 1923.

21. Ochsner, Alton, and Graves, A. M.: An analysis of 3,372 collective and personal cases. *Ann. Surg.* 98:961. 1933.

22. Ochsner, A. and de Bakey, M.: Subphrenic abscess, collectible review and analysis of 3,608 collected and personal cases. *International Abstracts of Surgery, Gynecology, and Obstetrics* 66:426. 1938.

23. Ozeran, R. S.: Subdiaphragmatic abscess, diagnosis and treatment. *Amer. Surg.* 33:64-67. 1967.

24. Sherman, Neal J.; Davis, John R. and Jesseph, J. E.: Subphrenic abscess a continuing hazard. *Amer. J. Surg.* 117:117. January, 1969.

DR. LOREN F. TAYLOR  
RECEIVES APPOINTMENT

Dr. Loren F. Taylor, professor of anesthesiology at the University of Kansas Medical Center, has been appointed Deputy Executive Director of the newly created Commission to probe the entire range of problems associated with the medical malpractice claims against health care providers and institutions.

In announcing the creation of the ommission, HEW Secretary Elliott L. Richardson stated the Commission will focus on the fundamental causes behind the rising number of malpractice claims and their effects on the health care system, the legal system, the insurance industry and the general public.

"In his February Health Message, the President directed me to convene a Commission to identify and evaluate the causes and consequences of malpractice claims through an intensive program of research and analysis," said Secretary Richardson. "I feel confident this outstanding group will make a major contribution towards solving one of the Nation's most vexing health care problems."

Headed by Attorney Wendell Freeland of Pittsburgh, Pennsylvania, the Commission on Medical Malpractice will represent health care providers and institutions, the legal profession, the insurance industry and the general public.

Eli P. Bernzweig, HEW's specialist in the medical malpractice area, has been named Executive Director of the Commission staff. Dr. Taylor has been granted a year's leave of absence from the University of Kansas School of Medicine, to serve as Deputy Executive Director of the Commission staff.



# Colitis Cystica Profunda

## *Clinical and Histological Differentiation of Mucinous Adenocarcinoma From Colitis Cystica Profunda*

ROBERT J. CAPEHART, M.D., and JACK W. GRAVES, M.D., *Wichita*

OCCASIONALLY a disease process is encountered which is difficult to distinguish from another entity, with a much different treatment and prognosis. Such is the problem with colitis cystica profunda. This is illustrated by the following case.

### Case History

This was a 39-year-old female who had symptoms dating back seven months prior to being seen by her local physician. The symptoms consisted of rectal bleeding and mucous discharge. Proctosigmoidoscopy revealed a mass at 6 centimeters, where a biopsy was taken. This was interpreted by the pathologist to be a mucinous adenocarcinoma. Barium enema revealed a filling defect in the lower rectum.

If any one of you were faced with this problem, the treatment might result in a definitive carcinoma procedure.

For people who are aware of colitis cystica profunda, it is a benign lesion. For those who may not be familiar with the lesion, both pathologists and surgeons, it may be difficult to differentiate this benign lesion from a well differentiated mucous adenocarcinoma. Of the 36 cases reported in the American literature, six have undergone abdominal-perineal resection. This case represents the 37th case and the seventh abdominal-perineal resection.

The differential diagnosis of colitis cystica profunda and mucous adenocarcinoma which is accompanied by inflammatory infiltrate can be made with a high degree of accuracy. But there must be some degree of suspicion and familiarity with the characteristic features of both lesions, and the pathologists have an adequate amount of material for histological examination.

Clinically, the two diseases are quite similar. On x-ray, with colitis cystica profunda you see an irregular polypoid filling defect; whereas, with mucinous adenocarcinoma the lumen is often narrowed which may resemble a non-malignant stricture

or inflammation. A mass may be present on palpation in both entities presenting symptoms which may vary from transanal bleeding, to mucous discharge, to diarrhea, to constipation. On direct visualization through the proctosigmoidoscope, one may see ulceration in both lesions. Colitis cystica profunda rarely exceeds 3 centimeters in size; whereas, mucinous adenocarcinoma may be much larger. The prognosis in colitis cystica profunda with local resection is good; whereas, with the mucinous adenocarcinoma, local resection heals poorly and leads to chronic fistula formation. Histologically, the two lesions can be differentiated in that in colitis cystica profunda, some glands are slightly atypical but they are non-malignant, however, there are some hyperchromatic nuclei and mitoses in areas of inflammation. The glandular lining consists of well differentiated mucous cells often resembling well developed colonic type mucosa. There are submucosal and intramuscular mucous lakes in which occasional atypical cells are seen. There is some cystic dilatation of the glands. One may see inflammatory infiltrate of acute and chronic cells with granulation tissue formation. There may also be stromal fibrosis and scarring which separates and distorts glands. Whereas, in well differentiated mucinous carcinoma, glands may be partially or completely lined by malignant cells and in these glands, there is a transition of a single layer of normal lining cells to atypical and malignant cells with prominent, irregular, multilayering. There are mucous lakes in which nests of cells and occasional clusters of signet ring cells are seen. Cystic dilatation of glands with interglandular papulations and budding, as well as inflammatory infiltrates of lymphocytes and plasma cells are seen. Although the histological picture is characteristic, these lesions can be mistaken for each other because of the formation of the aberrantly located gland forming colonic epithelium and the intramural acellular mucus.

### References

Scruggs and Duckworth: Colitis cystica profunda. *Southern Med. J.* Vol. 61, June 1964.

(Continued on page 392)

Presented at the annual meeting of the Kansas Chapter, American College of Surgeons, November 22, 1970, Topeka, Kansas.

# Esophageal Atresia in Twins

## *Esophageal Atresia With Tracheo-Esophageal Fistula Occurring in Multiple Birth*

S. JIM FARHA, M.D., F.A.C.S.,\* CLAYTON H. DIENER, M.D.\*\* and  
PAUL R. BLOCK, M.D.,\*\*\* *Wichita*

ESOPHAGEAL ATRESIA occurs once in every 4,500 to 5,000 births.<sup>1, 2</sup> In the English literature there have been 18 sets of twins reported in which one member of the set had an esophageal atresia with or without a tracheo-esophageal fistula, six of the sets were thought to be identical.<sup>3, 4</sup> Woolley<sup>4</sup> in 1961, was the first to report a set of identical twins in which each member had an esophageal atresia with a tracheo-esophageal fistula. In spite of being premature, both survived surgical correction. The second set of identical twins with esophageal atresia and tracheo-esophageal fistula were reported by Blank<sup>3</sup> in 1967, and both underwent successful single-staged surgical repair.

The purpose of this paper is to report esophageal atresia with tracheo-esophageal fistula occurring in both siblings of what appeared to be fraternal twins. Also, we intend to discuss the complication of recurrent fistula and to describe a method of elongation of the proximal pouch when the distance between the two ends of the esophagus is too great for primary anastomosis.

### Case Report

Twin male infants, *A* (Jimmy), weighing 6 pounds, 14 ounces, and *B* (Johnny), weighing 6 pounds, 13 ounces, were born on July 18, 1969, to a 21-year-old primigravida. Her prenatal course was uneventful with a normal delivery at 42 weeks gestation. Although both twins were vigorous at birth, it was soon noted that they had excessive mucus and soon developed respiratory distress. On the third day of life, x-ray studies confirmed the presence of an esophageal atresia with a distal tracheo-esophageal fistula in both twins.

### Course of Infant *A* (Jimmy)

On the third day of life under general endotracheal anesthesia, through a right transpleural approach the fistula was divided and a Haight anastomosis was done without tension using 5-0 silk. After closing the chest, a Stamm gastrostomy was done. The immediate postoperative course was complicated by pneumonitis. Oral feedings were started on the ninth postoperative day and he was discharged on the twentieth postoperative day.

Two weeks later he was re-admitted because of fever, vomiting, and choking spells. Barium swallow on September 3, 1969, showed an H-type tracheo-

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**We believe this to be the third set of identical twins with both members of the set having an esophageal atresia and tracheo-esophageal fistula to be reported in English literature. One twin had a recurrent fistula which was successfully managed and the other had a two-staged procedure with elongation of the proximal pouch and later successful end-to-end anastomosis.**

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esophageal fistula (*Figure 1*). After waiting six weeks to see if the fistula would close spontaneously, a recurrent fistula at the site of the previous anastomosis was divided through the same transpleural approach. He was discharged four weeks after his surgery. On April 2, 1970, a barium swallow showed a good lumen and the infant was thriving very well.

### Course of Infant *B* (Johnny)

On the fourth day of life under general endotracheal anesthesia through a transpleural approach the tracheo-esophageal fistula was divided. A primary anastomosis was not done, because the distance between the atretic end of the esophagus and

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Figure 1

the distal esophagus was greater than 3 centimeters, and the infant was experiencing considerable respiratory difficulty. The distal esophagus was closed, following which a Stamm gastrostomy was done. A nasogastric tube was placed into the proximal pouch and connected to continuous suction.

Elongation of the proximal pouch was begun on the fifth postoperative day using a #16 mercury filled Bougie with mild force. This was done daily, gradually increasing the size of the dilator to a #26 French. The distance between the two ends of the esophagus was visualized by placing the mercury filled Bougie in the proximal esophagus and barium in the stomach via the gastrostomy under fluoroscopic control. The infant was placed in sixty degrees Trendelenburg to get the barium to reflux into the distal esophagus, and x-rays taken on August 13, 1969, showed the two ends of the esophagus to be about 20 millimeters apart (*Figure 2*). Dilatations were continued and repeated x-ray studies using the same technique showed the ends of the esophagus to be 5 millimeters to 6 millimeters and 4 millimeters to 5 millimeters apart (*Figure 3*) on August 28, 1969, and September 24, 1969, respectively.

Due to an upper respiratory infection definitive surgery was delayed. Feeding via the gastrostomy

tube enabled the infant to gain weight. As he became older and stronger it became more difficult to keep the suction tube in the proximal pouch. On October 22, 1969, the esophagus was anastomosed via a right transpleural approach without tension. Oral feedings were started on the twelfth postoperative day. Since the infant had never taken oral feedings, considerable time was required to teach him to eat.

Barium swallow on April 2, 1970, showed a stricture at the site of anastomosis with a lumen of 2-3 millimeters. Esophageal dilatations have been carried out at four week intervals, maintaining an adequate lumen. Presently we do not anticipate any further need of dilatations and we have not done dilatation for the past six months.

## Discussion

### FRATERNAL OR IDENTICAL TWINS?

Since the twins had separate placentas, amnions and chorions as confirmed by the pathologist, they were thought to be fraternal (dizygotic) at birth. The two previously reported cases occurring in both siblings were identical (monozygotic) twins. The possibility of having the first set of fraternal twins with this anomaly stimulated more study of the zygosity. Blood studies showed identical serologic phenotypes and lymphocytic typing. The most<sup>5</sup> highly reliable method for determining whether or not twins are identical is by doing reciprocal skin grafts. This was done at eight months of age with no evidence of rejection. If the ova divides at an eight to twelve cell stage, each develops independently, forming a separate placenta, amnion and chorion. This suggests that the stage for these identical anomalies was set very early.

### RECURRENCE

Recurrence of the tracheo-esophageal fistula is an uncommon complication.<sup>4</sup> Falletta<sup>6</sup> reported a case in 1964 at which time he reviewed the literature. He found 30 cases of recurrent fistulas with an incidence of about 2 per cent. Of the 30 cases, 24 were re-operated, 12 of which died postoperatively, five were diagnosed at autopsy, and one closed spontaneously. The incidence of anastomotic leaks is considerably higher, but many of these will close with surgical intervention.<sup>7</sup>

The symptoms of a recurrent fistula are a "brassy" cough with repeated bouts of pneumonitis.<sup>8,9</sup> Although in twin A, recurrence or missed fistula was considered soon after re-admission, the lesion was not demonstrated until the second barium swallow. The recurrent fistula is anatomically similar to an H-type fistula and a difficult lesion to demonstrate.

Cowley<sup>10</sup> reported four cases of recurrent fistulas and recommends the use of a fine #6-0 monofilament stainless steel wire suture for the anastomosis



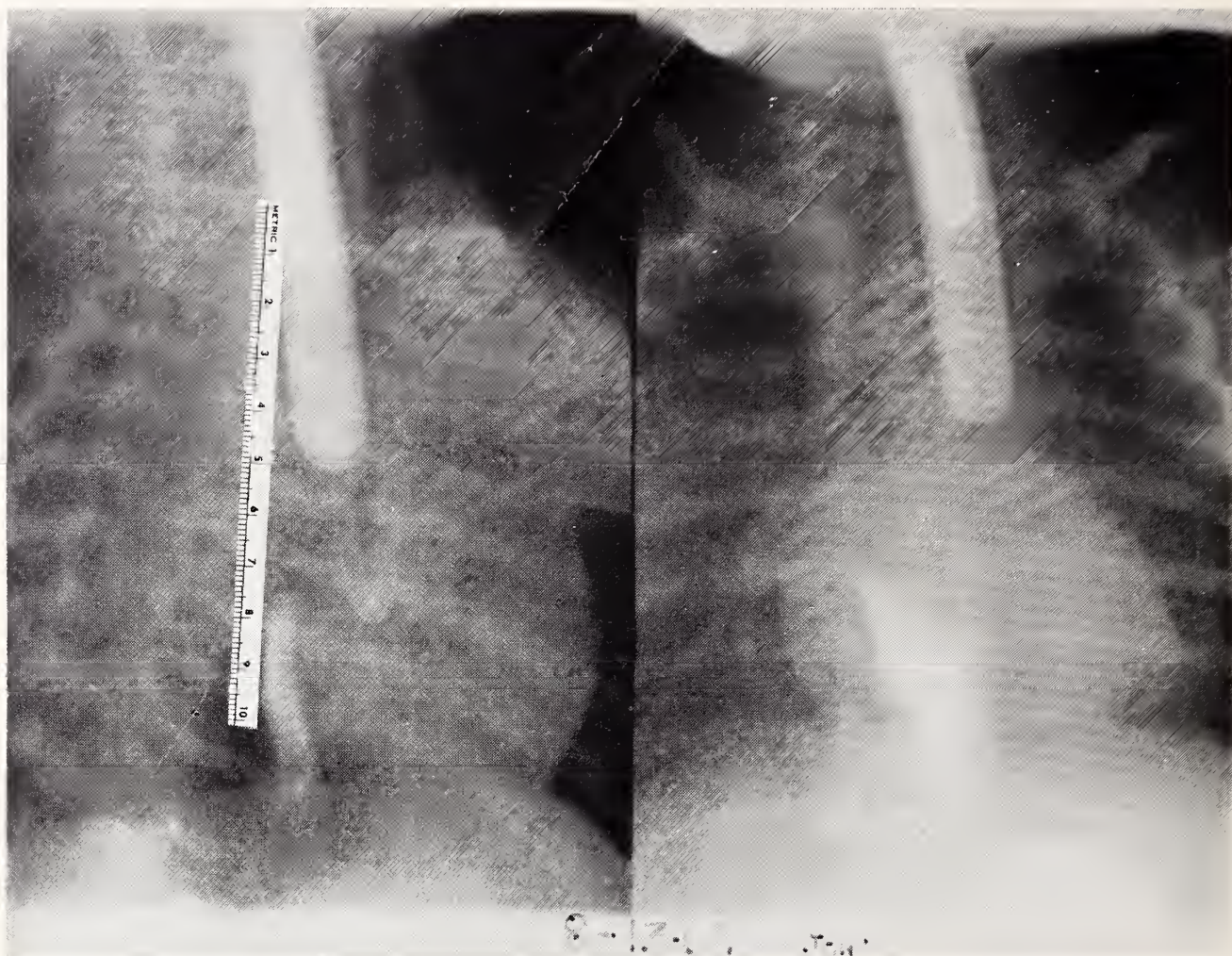


Figure 2

to get away from the wick-like action of silk which may cause an abscess outside the esophagus that breaks through into the trachea forming a fistula. Leix<sup>11</sup> and Schwab had one recurrent fistula in eight cases after using a technique of one layer silk end-to-side anastomosis with ligation of the fistula in continuity.

The management of recurrent fistula is a gastrostomy for feeding. Although several cases of spontaneous closure of the fistula have been reported, most require re-operation. Haight<sup>12</sup> emphasized that early reoperation is often not successful and that results are better if done several months later. This infant's fistula, as well as two others repaired by the same surgeon, developed no stricture at the site of repair.

#### STAGE PROCEDURE

The type of staging that is needed depends on the general condition of the infant and the findings at the time of surgery.<sup>13-16</sup> An emergency decompression gastrostomy has been emphasized as an effective first procedure in the management of these infants and recently a technique has been described for partitioning the stomach with double gastrostomy,<sup>17</sup> to provide time for the infant's condition to improve before definitive thoracotomy. We feel that unless the

infant is moribund, in addition to gastrostomy, the fistula should be interrupted in the first stage of management.

Part of infant *B*'s respiratory distress at the first procedure was due to gastric distention which was not discovered until gastrostomy was done after closing the chest. Assisting respiration in a patient with tracheo-esophageal fistula can result in marked dilatation of the stomach. We emphasize the importance of doing a gastrostomy first, especially in a community hospital where a pediatric anesthesiologist is not often available.

The management of cases when the distance between the two ends of the esophagus is too great for primary anastomosis has always been a difficult problem. Delayed colonic interposition was the most satisfactory procedure until 1965. In 1965, Bentley<sup>18</sup> recommended a colon transplantation at the primary operation. About the same time, Howard and Meyers<sup>19</sup> demonstrated that the proximal pouch could be elongated by using a mercury filled Hurst dilator.

When staging is necessary, the proper management of the blind pouch becomes a difficult problem. The surgeon has the choice of exteriorizing the proximal pouch in the neck which renders later reconstruction with primary anastomosis difficult, or of in-



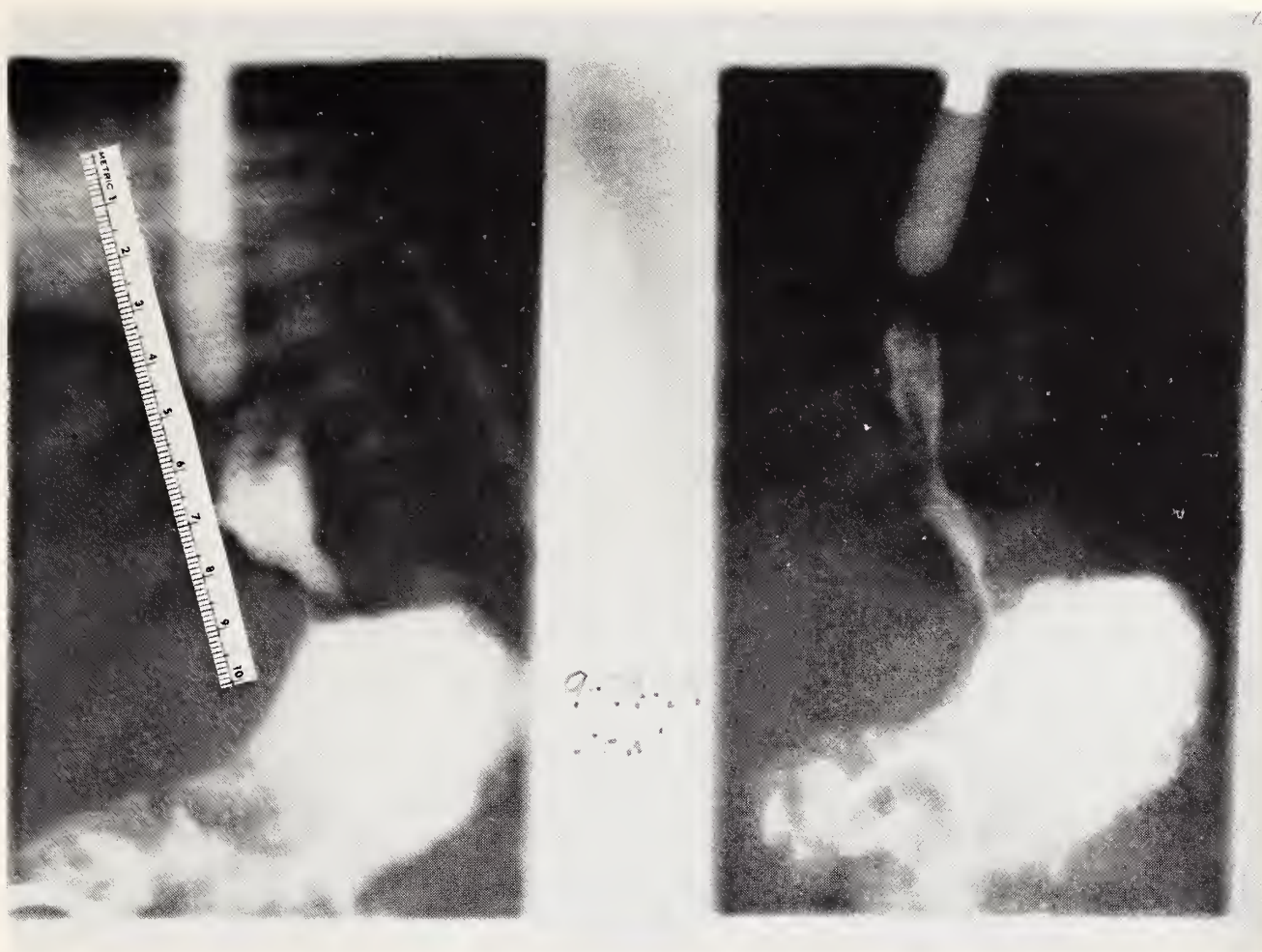


Figure 3

serting some type of suction catheter into the pouch. The presence of a catheter through the nasopharynx is very irritating. A simple pharyngostomy may be done to pass a tube into the blind pouch.<sup>20</sup>

If the distance between the two ends of the esophagus is greater than 3 centimeters, it is better not to do a primary anastomosis but to do a staged procedure. A gastrostomy and ligation of the fistula are done in the first stage. The proximal pouch is then elongated by passing a mercury filled Bougie through the mouth into the pouch and applying slight pressure for five to ten minutes.<sup>19-22</sup> This should be done once or twice daily for four to eight weeks. The greatest gain in length occurs in the first several weeks. If the pouch can be elongated so that an end-to-end anastomosis can be done, this would be a far superior procedure to a colon interposition. Occasionally a stricture will form at the site of anastomosis, but this can be dealt with at a later date.

## References

1. Haight, C.: Some observations on esophageal atresia and tracheo-esophageal fistulas of congenital origin. *J. Thoracic Surgery*, 34:141 (Aug., 1957).
2. Blackburn, W. R. and Amoury, R. A.: Congenital esophago-pulmonary fistula without esophageal atresia: an analysis of 260 fistulas in infants, children and adults. *Review of Surgery* (May-June, 1966), pp. 153-175.
3. Blank, R. H.; Prillamon, P. E., Jr. and Minor, G. R.: Congenital esophageal atresia with tracheo-esophageal fistula occurring in identical twins. *J. Thoracic Surgery*, 53:192, 1967.
4. Woolley, M. M.; Chinnock, R. F. and Paul, R. H.: Premature twins with esophageal atresia and tracheo-esophageal fistula. *Acta Paediatrica* 50:423-430 (July, 1961).
5. Eastman, Nicholson, Williams: *Obstetrics* (12th Edition), New York. Appleton-Century-Crofts, Inc.
6. Falletta, G. P.: Recommunication on repair of congenital tracheo-fistula. *Arch. Surgery* 88:779, 1964.
7. Holder, M.: Parenteral nutrition and esophageal anastomotic leak. *Archives of Surgery* 101:436 (Sept., 1970).
8. Hood, J. H. and Morgan, F. W.: Atresia of the oesophagus and congenital tracheo-esophageal fistula in infants. *Aust. Radiol.* (1968), pp. 12, 49.
9. Holder, T. M. and Washcraft, M. K.: Esophageal atresia and tracheoesophageal fistula. *Current Problems in Surgery* (Aug. 1969).
10. Cowley, L. L.: Congenital tracheo-esophageal fistula: recurrence after repair. *The American Surgeon*, Vol. 33, No. 5 (May, 1967), pp. 409 to 410.
11. Leix, F. and Schwab, C. E.: End-to-side operative technique for esophageal atresia with tracheo-esophageal fistula. *Amer. J. Surg.* Vol. 118 (Jan.-Dec., 1969), pp. 225-235.
12. Haight, C.: The management of congenital esophageal atresia and tracheo-esophageal fistula. *SCNA* 41:1281 (Oct. 1961).

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# Intestinal Radiation Effect

## *Radiation Injury to the Small Intestine: Report of One Case With Obstruction Thirty Years After Treatment*

W. G. CAUBLE, M.D. and RUTH PAGE, M.D., *Wichita\**

OBSTRUCTION of the small bowel is one of the complications that may be produced following radiation to the abdominal viscera. It is one of the infrequent difficulties that may be encountered following x-ray therapy. The case that I wish to present is of particular interest in the fact that the patient came to surgery for obstruction 30 years after receiving radiation over the abdomen for carcinoma of the testicle.

The pathology of radiation injury to the gastrointestinal tract has been studied extensively throughout the years and with the advent of supervoltage radiation, new interest and study was initiated. Brick,<sup>1</sup> in discussing the effects of million volt irradiation on the gastrointestinal tract, stated that all parts of the gastrointestinal tract were affected but the sensitivity varied in the individual patient. The same dosage of irradiation may be tolerated well by one patient and not by another patient. He pointed out that radiation injury to the small intestine and colon resulted in a more subtle clinical picture, with a delay in onset of symptoms for many months and even years after completion of therapy. On the basis of his observations he thought that a maximum tolerance dose to small bowel is in the range of 4000 to 4500 roentgens while the large intestine is 4500 roentgens.

It has been shown by Peterson and Clausen<sup>2</sup> that the early pathologic changes are mainly bowel edema and hyperemia with granular friable mucosa. This early process usually reaches its maximum by the fourth week after radiation. In most cases this clears and the patients do not develop any serious complications. Mucosal ulceration may develop and lead into serious complications. They are usually found in the ileum but may occur in the jejunum. They may vary in number from one to many and may vary in size and depth involving only the mucosa or the whole thickness of the bowel. If the ulcers encircle the bowel, later fibrotic and cicatricial change may lead to stenosis and obstruction. Vascular erosion may

produce bleeding and cause a bloody diarrhea. The ulcer may penetrate and cause a peritonitis, leading to abscess or fistula formation. Grossly, the bowel is thickened, edematous and pale. The telangiectatic veins cover the serosa and the mesentery may become thickened, edematous and foreshortened. Besides ulcerations, other changes may be seen microscopically, namely, mucosal atrophy, submucosal fibrosis, inter-

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**A brief discussion of intestinal complications following x-ray therapy has been presented. The pathological change has been shown in relation, mainly, to the small bowel. One case has been presented in which there was an elapsed time of 30 years between the radiation treatment and the definitive surgical procedure. It should be kept in mind that radiation treatment over the abdomen may cause definite pathological change in the gastrointestinal tract and sometimes it may take many years for this to develop enough to become a surgical problem.**

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stitial edema, luminal reduction of vessels from hyaline thickening of intima and media, lymphoid follicle change and hyalinization of muscle.

The diagnosis is made by a careful history and physical examination. X-ray studies of the small bowel may be of help. The patient may run a low grade fever, a bloody diarrhea may develop or perforation and abscess formation may be produced. A mass may be palpable, caused by a gangrenous loop of ileum surrounded by omentum and adjoining intestine.<sup>2</sup> One should always keep in mind the possibility of recurrent cancer or metastasis. Abdominal cramping, distention, anorexia and temporary constipation should lead one to think of partial intermittent obstruction and surgery should be instituted.

DeCosse, *et al.*,<sup>3</sup> in discussing this problem studied 100 patients with radiation induced injury to the gastrointestinal tract. In the small bowel injury group, 25 in number, the interval from radiation therapy to surgery averaged 6.5 years, ranging from 1 to 31

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\* From the Internal Medicine and Surgical Section, Wesley Medical Center, and submitted under the auspices of the Wesley Medical Research Foundation.

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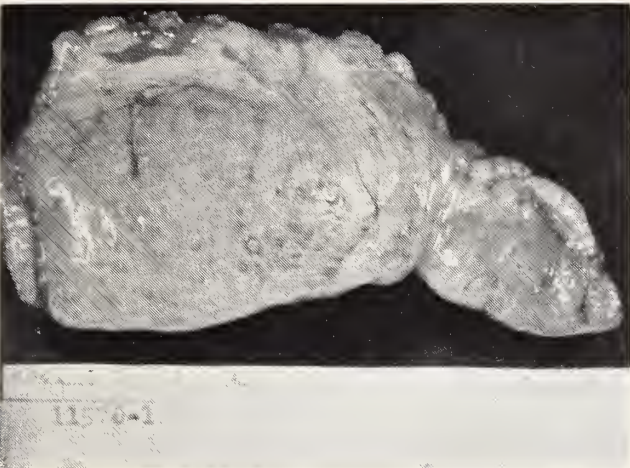


Figure 1. Gross specimen removed showing the annular constriction of the small intestine.

years. Surgery was necessary in 19 and non-operative management was used in six. The latter group had a persistent ileitis or a chronic partial small bowel obstruction. All six patients continued to be symptomatic.

**Case Report**

SVC, a 72-year-old male was first seen by WGC on January 1, 1970. He gave a history of having pain in the abdomen following the ingestion of food most of the time during the past 15 to 20 years. He was seen by Dr. RP in November 1958, complaining of recurrent abdominal distress. At that time, he avoided eating because of the difficulty. He was followed by Dr. RP over the years and seen at intervals because of attacks of mild abdominal cramping, vomiting and the ingestion of hot water would frequently relieve him. He limited himself to a bland diet; however, in 1969 he was eating normally.

The patient gave a history of having the right testicle removed in April 1940. He had noted a painful tumor in it four years previously. The diagnosis was teratoma and he was sent to the Ellis Fischel



Figure 2. Small bowel showing the chronic annular ulcer.

State Cancer Hospital in Columbia, Missouri, for x-ray therapy. At that time his physical examination was essentially normal. He was given deep radiation from July 31, 1940, to October 9, 1940, through eight portal, four anterior and four posterior, 2000 roentgens to each portal using a 200 KV machine. He withstood the course of treatment remarkably well.

On examination January 8, 1970, the abdomen was flat and moderately soft, no masses were felt and there was no muscle guard or rigidity. Peristaltic waves were visible and on auscultation there were increased bowel sounds which came in waves. Rectal examination revealed a collapsed wall with some fecal material present. His small bowel x-ray studies done on two occasions revealed a narrowed segment of the small bowel (ileum). The area extended over a distance of about 3 centimeters. The radiologist thought it represented a stenotic segment of the bowel, secondary to regional enteritis.

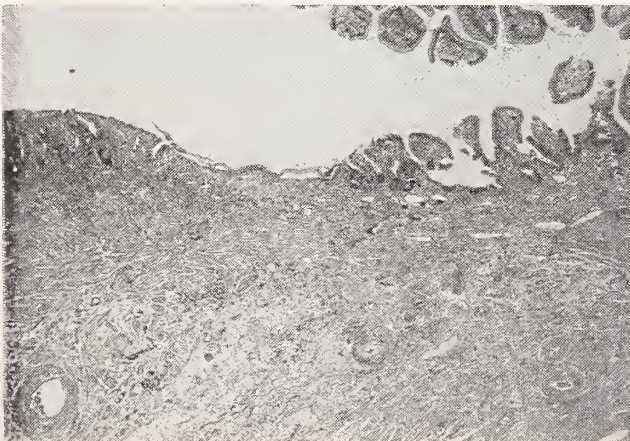


Figure 3. Low power microscopic view of chronic ulcerated area.

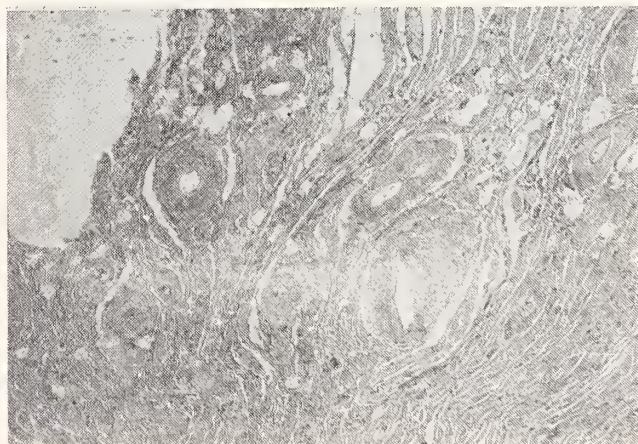


Figure 4. High power microscopic view showing eosinophiles and fibrosis replacing the circular muscle layers associated with some hypertrophy of the adjacent muscular wall. There is also fibrosis of the serosa which contains scattered mononuclear infiltrate.



A diagnosis of early bowel obstruction was made and he improved some; however, on January 15, 1970, he was taken to surgery where about 2 feet distal to the ligament of Treitz, there was found a heavily scarred area involving the wall of the bowel, completely encircling the bowel. It was distended above and collapsed below the lesion. The gallbladder was distended and over 100 cubic centimeters of purulent, thick, bile was aspirated. It contained two stones. The lesion of the small bowel was resected and an end-to-end anastomosis was done. The gallbladder was removed and the bed drained. An appendectomy was also done. He did well following surgery and had an uneventful recovery. Since then he has had no bowel difficulty.

The pathologist reported the lesion of the small bowel (*Figures 1 and 2*) as being an annular ulcer, chronic, with eosinophiles (*Figures 3 and 4*) compatible with irradiation effect. The gallbladder was reported as showing chronic cholecystitis with recent exacerbation.

### References

1. Brick, I. B.: Effects of million volt irradiation on the gastrointestinal tract. *Arch. Int. Med.*, 96:26-31, July 1955.
2. Peterson, H. H., et al.: Radiation injury to the small bowel with special consideration of surgical complications. *Gastroenterology* 31:47, 1956.
3. Decosse, J. J., et al.: The natural history and management of radiation induced injury of the gastrointestinal tract. *Ann. Surg.* 170:369-84, Sept. 1969.
16. Koop, C. E. and Hamilton, J. P.: Atresia of the esophagus, increased survival with staged procedures in poor risk infants. *Ann. Surg.* 162:389, 1965.
17. Touloukian, R. J. and Stinson, K. K.: Temporary gastric partition. A model for staged repair of esophageal atresia with fistula. *Ann. Surg.* Vol. 171, No. 2 (Feb. 1970), pp. 184-188.
18. Bentley, J. F.: Primary colonic substitution for atresia of the esophagus. *Surgery* 58:731-736 (July-Dec., 1965).
19. Howard, R. N. and Meyers, A.: Esophageal atresia: a technique for elongating the upper pouch. *Surgery* 58:725-727 (July-Dec. 1965).
20. Talbert, J. L. and Haller, J. A.: Temporary tube pharyngostomy in the staged repair of congenital tracheo-esophageal fistula. *Surgery* 58:737 (July-Dec., 1965).
21. Johnson, P. W.: Elongation of the upper segment in esophageal atresia, report of a case. *Surgery*. Vol. 58 (July-Dec.), 1965, pp. 741-744.
22. Woolley, M. M.; Leix, F.; Johnston, P. W. and Hays, D. M.: Esophageal atresia types A and B: upper pouch elongation and delayed anatomic reconstruction. *J. Pedi. Surg.* Vol. 4 (Jan.-Dec., 1969), pp. 148-153.

### BOOKLET ON X-RAY PROCEDURES AVAILABLE

The Food and Drug Administration's Bureau of Radiological Health and the American College of Radiology have jointly produced and distributed to healing arts practitioners nearly a half million copies of a booklet designed to improve professional judgment in decisions to use diagnostic x-ray procedures and to increase patient and user protection.

About 300,000 physicians were on the booklet mailing list in addition to medical students, podiatrists, veterinarians, and radiologic technologists.

"Diagnostic x-ray examinations, although among the most valuable of all the tools of modern medicine, involve an element of radiation risk which demands that such examinations be prescribed judiciously and conducted with the fullest possible use of patient protection methods," said Charles C. Edwards, M.D., Commissioner of Food and Drugs.

The use of diagnostic x-ray procedures has been increasing, Dr. Edwards said, and may be associated with an increase in the dose to reproductive organs estimated to be received annually from x-ray exposure by the American people. He noted that diagnostic x-ray examinations represent the largest single source of exposure to man-made radiation in the United States.

The booklet, "X-ray Examinations . . . A Guide to Good Practice," was prepared by members of the American College of Radiology Commission on Radiologic Units, Standards and Protection. It was published by the Bureau and distributed through the cooperation of the American Medical Association and other professional organizations.

Copies of "X-ray Examinations . . . A Guide to Good Practice" (Government Printing Office Stock No. 5505-003) are available for purchase at 35 cents per copy from the Superintendent of Documents, Washington, D. C. 20402.

### Colitis Cystica Profunda

(Continued from page 385)

Silver, H.: Differentiation of pseudoinflammatory colloid carcinoma from colitis cystica profunda. *Dis. Colon Rectum*. Vol. 12, Pg. 63, 1969.

Castleman, B.: New Eng. J. Med., Sept. 15 (608), 1966.

Muldoon, et al.: Colitis cystica profunda. *Dis. Colon Rectum*. 11:220, 1968.

Fechner: Polyp of colon possessing features of colitis cystica profunda. *Dis. Colon Rectum*, 10:359, 1967.

Epstein, E. S., et al.: Colitis cystica profunda. *Am. J. Clin. Path.* 45:186, 1966.

Goodall, H. B.: Colitis cystica profunda. *J. Path. Bact.* 73:33, 1957.

Allen, M. S.: Hamartomatous inverted polyps of the rectum. *Cancer* 19:257-265, 1966.

Castleman, B.: Mucocoele of sigmoid. *Cancer Seminar* 3:133-135 1963.

### Esophageal Atresia in Twins

(Continued from page 389)

13. Michel, S. and Bickers, W. M.: Esophageal atresia with tracheo-esophageal fistula. *Arch. Surg.* Vol. 100, No. 5 (May, 1970).

14. Holder, Thomas M. and Ashcraft, K. W.: Collective review esophageal atresia and tracheo-esophageal fistula. *Ann. Thorac. Surg.* Vol. 9, No. 5 (May, 1970).

15. Krishinger, G. L. and Woolley, M. M.: Esophageal atresia and tracheo-esophageal fistula, 25 years experience and current management. *Calif. Med.* Vol. III, No. 3 (Sept. 1969).



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## The President's Message

"What is past is Prologue. . . ."

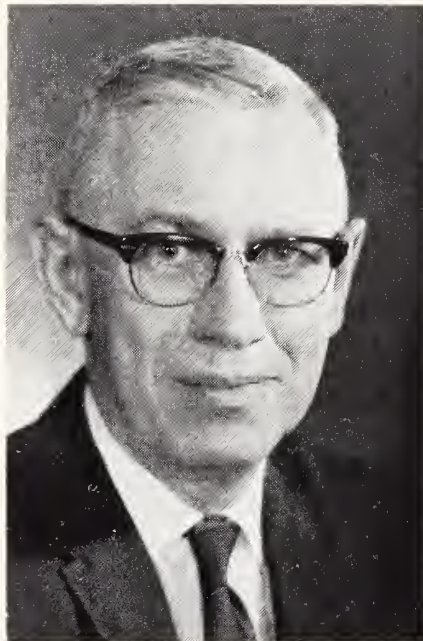
The medical profession today is the frequent target for criticism in the press, on television and in casual conversation. Members of the Kansas Medical Society have every reason to be proud of the accomplishments of doctors in this state and I would like to dwell briefly on what was done by those who went before us.

The Kansas Medical Society was incorporated on February 10, 1859, by the Kansas Territorial Legislature. The act stated that the name "The Kansas Medical Society" . . . "shall have perpetual succession forever." An accident involving this phrase contributed towards making the Kansas Medical Society the oldest corporation in continuous existence in the state. The first Kansas legislature abolished all charters issued by the territorial legislature and then systematically reinstated each of them but neglected or forgot to do so for the Kansas Medical Society. The Kansas Supreme Court ruled in the 1870's that because of the above phrase the Society is still in existence.

When Kansas gained statehood the three highest offices were all occupied by physicians. These same physicians were incorporators of the Kansas Medical Society. Kansas' first governor was Charles Robinson, M.D., born in Massachusetts in 1818. He came to Kansas to prepare the way for the anti-slavery settlers in the Territory. Dr. Robinson died in Lawrence, Kansas, on August 7, 1894. The first lieutenant governor was Joseph P. Root, M.D., also from Massachusetts and the first secretary of state was John Winter Robinson, M.D., also from the New England area. It is interesting to note that two other physicians later served as lieutenant governors of the state, Charles H. Huffman, M.D. of Columbus from 1919 to 1923 and J. W. Graybill, M.D. of Newton, who held the office for two terms 1929 to 1933.

Physicians of the state also aided in the formation of the University of Kansas which first offered a medical course in 1879 and by 1905 had become a full four-year medical school. In 1885, physicians of the state and of the Society were instrumental in the formation of the Kansas State Board of Health. Samuel J. Crumbine, M.D., of Dodge City, became its first executive secretary.

The names of famous Kansas physicians are many. Dr. Crumbine became a well known authority in the field of public health and launched the crusade nationwide to swat the fly and abolish the common drinking cup. Arthur Hertzler, M.D., was internationally known both as a surgeon and as the author of the widely read book *The Horse and Buggy Doctor*. The work of



the Doctors Menninger of Topeka in the formation of the Menninger Clinic has brought international acclaim for Kansas medicine. Many other physicians have made significant contributions to the art and to the science of medicine throughout the years.

Kansas passed through times of great difficulty as she emerged from territorial status into statehood.

Droughts, crop failures and economic depressions were common at the end of the last century and the beginning of the new, but despite these problems the state physicians served the public, built the towns and cities, established the medical school and formed a medical society which still flourishes.

Despite the controversy and air of crisis in which we live, the members of the Kansas Medical Society still go forward serving their patients and improving the health of the people of the state by their contributions. The system that has survived 112 years has been tested and found to be successful. The early pioneer physicians of the state are examples for all of us to follow in our work as physicians in the 1970's.

*Dr. J. J. Reals, M.D.*

President



## *The Ever-Whirling Wheel*

The joints are aching, the muscles are tender, there is still a noticeable shortness of breath, but clinical observations indicate that the body medical, while still in need of some adjustments in therapy, is surviving the most grievous of corporate afflictions, change. True, the condition seems to be epidemic, and some of the other patients may not survive in recognizable form. It is the fundamental nature of the disease that the recovered patient is never the same. While recovery does not endow permanent immunity, the patient, if he survives, usually emerges in better shape to relate to his fellow survivors, while the timid ones, who have retreated to a distant scene to avoid the disease, return to find they have no viable place in the new structure.

History is defined as that body of knowledge relating to past events. Not only is this definition inadequate, but it produces the names-dates concept of history which successfully turns off most prospective students. Rather, history should be defined as the study of human change. We are admonished that if we do not learn from history, we inevitably repeat its mistakes. This is unassailable advice since it is demonstrated daily. But the reason for this continued failure to retain some basic experiential knowledge that can be incorporated genetically and passed on to future generations must to some extent be associated with a failure to view past not so much in terms of the events changing concepts that produced the events and to derive a perspective that permits us to differentiate between healthy and unhealthy change. True, some of the historical philosophers have attempted to interpret history in this light, but the hurly-burly of daily politics and the expedient solutions have seldom offered a favorable environment for its development. Many have come to power by judicious understanding of the need for and methods of accomplishing change, only to revert to a policy of maintaining the status quo.

To paraphrase Mr. Shakespeare's comment on greatness, some people are born changeable, some achieve

change, and some have changes thrust upon them. In the medical world, there has been a certain parallel with age groups. The young have always advocated change. In one sense, they saw it as a means of establishing separate identity from their elders. In another sense, it is the ideal time to promote change since they have no established experience or practical structure which must be disrupted to make place for the new. The established group—the middle-aged ones—are in a better position to formulate change on the basis of need and practicality but are generally so engrossed in their burden of medical responsibilities that they abdicate the effort to change. The elders, to whom (as in any organized body) much of the control has passed, have seen change as a threat to all they hold dear, failing to see that what they hold dear is rapidly becoming anachronistic. They have resorted to a fixed approval of Viscount Falkland's warning that if change is not necessary, it is necessary not to change. This would be excellent creed if the perspective of those in power could be derived from the idealism and vitality of youth tempered with the practical experience and awareness of the middle-aged.

The resistance of the medical mind to change stems to some degree from its basic training and illustrates the manner in which good principles can lead to not-so-good practice. In order to establish a diagnosis, it is essential that an orderly plan of investigation be followed, unswerved by tantalizing invitations to pursue some tangent. Diagnosis established, the course of therapy must follow a consistent, objective, defensible line. Departure and experimentation are discouraged except in the area of legitimate research. Apart from the practical desirability of this concept, there is the legal necessity to conform to the "accepted" standards and procedures in the community. Changes must force their way in and are accepted only when pressure reaches a critical point and success is assured. That such a system has been productive of

*(Continued on page 397)*



# Medical-Legal Page

## Hospital Not Bound by Physicians' "No Charge" Representations

In a suit by a hospital to collect hospital charges from parents of a minor patient, a parent's testimony that the child's physicians had told her that a service plan would take care of the hospital bill should not have been admitted in evidence, a Kansas City appellate court ruled. The testimony was held inadmissible as hearsay.

A minor child was admitted to the hospital on two occasions. After the last release from the hospital, the parents of the child made some payments on the account but then refused to pay the balance. The hospital sued to recover its charges.

The evidence at the trial showed that, after evaluation by the Social Service Department of the hospital, the hospital agreed to accept the child as a "service patient," which relieved the patient of the physicians' charges but not the hospital's charges. The mother of the child had also signed an agreement to pay at the time of each admission.

The patient's physicians were members of the hospital staff authorized to bring patients to the hospital and to have the use of hospital facilities. However, they received no pay from the hospital.

The trial court admitted into evidence testimony by the child's parent concerning certain statements made by the patient's physicians. These statements tended to show that the patient would be placed in the hospital without charge. This testimony was objected to as being hearsay evidence.

In reversing the judgment for the parents of the patient, the appellate court held that admission of the testimony as to the statements by the physicians was erroneous unless the physicians could be considered agents of the hospital and acting within the scope of their authority. The evidence indicated that the physicians received no pay from the hospital and had no duties or obligations concerning the making or collection of hospital charges. Therefore, they could not be considered agents so as to make their statements binding on the hospital. Since the physicians were not agents of the hospital, testimony as to their statements should not have been admitted in evidence. The appellate court found that the statements were employed as proof of the vital issues in the case, and their admission as evidence was therefore greatly prejudicial to the hospital.—*Menorah Medical Center v. Davis*, 463 S.W.2d 618 (Mo., Kansas City Ct. of App., Feb. 1, 1971)

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This month's articles are reprinted from Vol. 23, No. 7, July 15, 1971.

## Brain Damage After Anesthetic In Dental Procedure in Hospital

A hospitalized child who suffered brain damage from cardiac arrest while the child was anesthetized for root canal therapy, a dental procedure, was awarded \$390,000 damages by a California jury. An anesthesiologist, a dentist, and a county hospital had made joint admission of liability.

An eight-year-old child who was already anesthetized was given 50 mg. of Demerol intravenously. Cardiac arrest ensued, and the child suffered brain damage. As a result he became a partially blind quadriplegic who could not feed himself or eliminate. Because of mental retardation, he would progress only to a mental age of nine years. I.Q. tests at the time of the trial showed a mental age of six. He required complete care in a home or facility, and his life expectancy was normal, or 61.5 years.

The boy's representative brought action against the dentist and the anesthesiologist, contending that the anesthesia equipment was not properly managed and that a tube was kinked, causing anoxia. He also claimed that the dental procedure did not warrant general anesthesia.

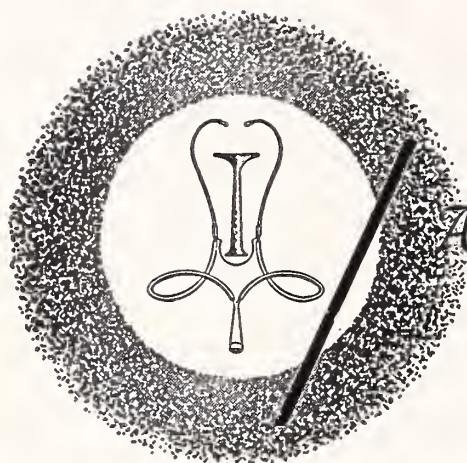
Although the dentist consented to joint admission of liability, he in fact denied liability, contending that the procedure was appropriately done with use of general anesthesia and that, if cardiac arrest had occurred, it resulted from the management of the anesthesia. He further stated that the child's needs could be served by one full-time attendant, while the child's representative said that three attendants in successive shifts were necessary.

Future nursing care was estimated at \$1,787,500 and future earning loss at \$567,367. The dentist and the anesthesiologist contended that \$256,893 invested at 7.5 per cent would provide sufficient funds to give the boy lifetime care. The attorney for the child asked the jury to award \$3,000,000, while the opposing attorneys asked the jury to award from \$250,000 to \$300,000. After the jury awarded the child \$390,000, the child's representative moved for a new trial.—*Hair v. County of Monterey* (Cal.Super.Ct., Monterey Co., Docket No. 67538, 1971)

## Failure to Warn Of Angiogram Risks

A patient who was given an explanation by physicians of angiography but not warned of the dangers of the procedure was awarded \$20,000 by an Illinois jury for injuries suffered as a result of the procedure.

(Continued on page 397)



## Announcements

*Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. Notice of the session is posted in advance to allow the physician time to make preparations.*

### SEPTEMBER

Sept. 20-24 Annual meeting, American Academy of Ophthalmology and Otolaryngology, Convention Center, Las Vegas. Write C. M. Kos, M.D., Exec. Secretary-Treasurer, American Academy of Ophthalmology and Otolaryngology, 15 Second St., S.W., Rochester, Minnesota 55901.

Sept. 24 Third annual academic assembly devoted to an intensive study of Diseases of the Thyroid, St. Francis Hospital, Wichita. Participating in the lectures and discussions: William McConahey, M.D., Endocrinologist, Section of Internal Medicine, and Donald Childs, M.D., chairman of the Section of Radiotherapy, both of the Mayo Clinic Foundation for Education and Research; John Beach Hazard, M.D., Department of Pathology, Cleveland Clinic; and Richard G. Martin, Chief, Section of Surgery, University of Texas M. D. Anderson Hospital and Tumor Clinic.

Sept. 27-29 7th National Conference, sponsored by the American Cancer Society and National Cancer Institute, Biltmore Hotel, Los Angeles. Write Sidney L. Arje, M.D., c/o American Cancer Society, 219 E. 42nd St., New York, New York 10017.

### OCTOBER

Oct. 2-3 25th annual meeting, American Cancer Society, Kansas Division, Ramada Inn Downtown, Topeka. Principal speakers: Bayard Morrison, M.D., As-

sistant Director, National Cancer Institute, Bethesda, Maryland, and Miss Virginia Barckley, R.N., National Nursing Consultant, American Cancer Society, New York City. Contact the Kansas Division of the ACS, 824 Tyler, Topeka 66612, for further information.

Oct. 11-13 41st annual fall conference, Oklahoma City Clinical Society, Skirvin Hotel, Oklahoma City. For information write the Oklahoma City Clinical Society, 601 Northwest Expressway, Oklahoma City 73118.

Oct. 15-16 Selected Endocrine and Metabolic Problems are the topics to be discussed at the "Bryan Days" meetings, Bryan Memorial Hospital, 4848 Sumner Street, Lincoln, Nebraska. For information contact George E. Larson, M.D., Chairman, Program Committee, c/o Bryan Memorial Hospital.

Oct. 16-21 40th annual meeting, American Academy of Pediatrics, Palmer House Hotel, Chicago.

Oct. 18-22 57th annual clinical congress, American College of Surgeons, Atlantic City.

Oct. 20-22 18th Western Cardiac Conference, *What's New in Cardiology*, University of Colorado Medical Center, Denver. For information write the Colorado Heart Association, 1375 Delaware St., Denver 80204.

Oct. 21-22 *Cardiopulmonary Resuscitation Training Course for Instructors*, sponsored by the Kansas Heart Association and the University of Kansas School of



Medicine. For information, write the Department of Continuing Education, KUMC, 39th & Rainbow, Kansas City, Kansas 66103, or the Kansas Heart Association, 5229 West 7th St., Topeka 66606.

- Oct. 28-30 49th annual fall clinical conference, Kansas City Southwest Clinical Society, Hotel Muehlebach, Kansas City, Missouri. For information write the Kansas City Southwest Clinical Society, 2220 Holmes St., Kansas City, Missouri 64108.

## POSTGRADUATE EDUCATION

University of Kansas:

- Sept. 27-28 School Health: The Roots of Responsibility  
 Sept. 30-Oct. 1 The Expanded Role of the Nurse  
 Oct. 4-5 Nurse Anesthesia  
 Oct. 7-8 Radiologic Technology  
 Oct. 19-20 Medicine and Religion: The Middle Years  
 Oct. 21-22 Cardiopulmonary Resuscitation Training Course for Instructors

For further information on the above courses write the Department of Postgraduate Medical Education, University of Kansas School of Medicine, Kansas City, Kansas 66103.

University of Colorado:

- Sept. 27-Oct. 1 Hospital Medical Staff Conference (Estes Park)  
 Oct. 4-8 High Risk Infant Care (limited)  
 Oct. 11-13 Obstetrics and Gynecology

For further information write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 East Ninth Avenue, Denver 80220.

## Editorial Comment

(Continued from page 394)

progress is obvious, but it is open to the criticism by those of short memory or those deliberately antagonistic that the changes should have been more and sooner.

In virtually every phase of medical life, pressures for change have reached the critical level. Whether any of the changes in effect or in prospect can be sure of success is beyond the capacity of the medical mind to predict since these pressures do not arise solely from professional sources but are part of a general upheaval and readjustment of societal (to use a term beloved of sociologists) concepts. The title of these

remarks, referring as it does to change, is borrowed from Edmund Spenser's *Faerie Qween* and serves a purpose of metaphor, but it should be pointed out that an ever-whirling wheel may also be a gyroscope which provides stability and balance. Mankind frequently pays homage to that unknown ancestor who is presumed to have invented the wheel. Whether the first man who turned his ankle on a round stone or the first warrior who won the day by rolling round boulders down on his enemies realized what he was demonstrating is not recorded, but we submit that the ancient we should be honoring is the genius who devised the axle so the wheel could be put to work. We have a plethora of wheels. It would be nice if someone could come up with a few axles that would fit them to provide the locomotion of change with the balance of the gyroscope.—D.E.G.

## Medical-Legal Page

(Continued from page 395)

The patient, a 67-year-old man who had had two prior heart attacks, was hospitalized because of anemia and dizziness. Hypaque was injected into the patient's brachial and carotid arteries in order to test for narrowing of the arteries and blood vessels in his head. After the angiogram, the patient suffered aphasia, with loss of ability to express himself and difficulty in understanding.

The patient brought suit for damages against the two physicians who performed the test and against the hospital. The physicians admitted that the procedure was dangerous. They said they had explained the procedure to the patient but had not told him of its hazards because they did not want to frighten him. They contended that this was good medical practice. They said that the patient's aphasia could have resulted from causes independent of the angiogram and pointed out that the patient's condition was improving. Another physician testified that good procedure at the time of the test was to inform the patient of all possibilities.

The attorney for the patient asked the jury to award \$32,500 in damages. The court directed a verdict in favor of the hospital, and the jury awarded damages of \$20,000 to the patient against both physicians.—*Nelson v. Stenn* (Ill.Cir.Ct., Cook Co., Docket No. 64L-29747, Feb. 4, 1971)

## NEW MEMBERS

The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.

John E. Robinson, M.D.  
 1045 N. Minneapolis  
 Wichita, Kansas 67214

Bruce W. Wells, M.D.  
 221 West 8th Street  
 Winfield, Kansas 67156

# *Political Education Is Important*

## Come to the— KaMPAC WORKSHOP PROGRAM

**October 10, 1971**

**Ramada Inn Downtown—Topeka, Kansas**

- 8:30 REGISTRATION—Coffee and rolls
- 9:30 WELCOME—Norton L. Francis, M.D., Chairman, KaMPAC
- 9:35 RESPONSE—William J. Reals, M.D., President, Kansas Medical Society
- 9:40 AMPAC BOARD—Jack Lewis, M.D., Member AMPAC Board
- 10:15 PANEL—Local Political Analysts: "Politics in Kansas"  
Whitley Austin, Moderator, Editor, *The Salina Journal*  
Ray Morgan, *Kansas City Star*  
Roger Myers, *Topeka Daily Capital*  
Al Polczinski, *Wichita Eagle-Beacon*  
Wayne Lee, *Hutchinson News*
- 11:15 William R. Roy, M.D., Congressman, 2nd District
- 12:30 LUNCHEON—Don Brotzman, Congressman, 2nd District, Colorado, Member of House Ways and Means Committee
- 2:00 PANEL OF LEGISLATORS — PHYSICIAN LEADERS  
Representative John T. Brauchi, M.D., Moderator  
Senator Tom Van Sickle Francis T. Collins, M.D.  
Senator Harold Herd H. Tom Gray, M.D.  
Representative Cal Strowig John C. Mitchell, M.D.  
Representative Pete Loux
- 3:00 Senator James Pearson of Kansas

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**Registration: \$10.00 Per Person**

**Send to: KaMPAC  
P. O. BOX 1032  
TOPEKA, KANSAS**



# Along the Bookshelf

## Clendening Medical Library

### RECENT ACQUISITIONS

- American Medical Association. Committee on Rating of Mental and Physical Impairment. Guides to the evaluation of permanent impairment. Chicago, American Medical Association, 1971.
- Bjorn, John C. The problem-oriented private practice of medicine; a system for comprehensive health care. Chicago, Modern Hospital Press, 1970.
- Braun, Harold A. ECG bases for arrhythmia management in coronary care. Missoula, Montana, Mountain Press, 1970.
- De Gruchy, Gordon Carle. Clinical haematology in medical practice. Oxford, Blackwell, 1970.
- Dermatology in general medicine. New York, McGraw-Hill, 1971.
- Duffy, John C. Emotional issues in the lives of physicians. Springfield, Ill., Thomas, 1970.
- Fontana, Vincent J. The maltreated child; the maltreatment syndrome in children. Springfield, Ill., Thomas, 1971.
- Genetic counseling in relation to mental retardation. Oxford, New York, Pergamon Press, 1971.
- Greenberg, Selig. The quality of mercy; a report on the critical condition of hospital and medical care in America. New York, Atheneum, 1971.
- International Symposium on Diagnosis and Treatment of Disorders Affecting the Intrauterine Patient, Dorado, 1967. Diagnosis and treatment of fetal disorders. New York, Springer, 1968.
- Johnson, Orval G. Tests and measurements in child development: a handbook. San Francisco, Jossey-Bass, 1971.
- Noland, Robert L. Counseling parents of the mentally retarded; a sourcebook. Springfield, Ill., Thomas, 1970.
- Rubenstein, Edward. Intensive medical care. New York, McGraw-Hill, 1971.
- Rugh, Roberts. From conception to birth; the drama of life's beginnings. New York, Harper & Row, 1971.
- Savitz, Roberta Aspel. Vision screening of the preschool child; report of a study. Washington, U. S. Children's Bureau, 1964.
- Schwartz, William. The practice of group work. New York, Columbia University Press, 1971.
- Silver, Henry K. Handbook of pediatrics. Los Altos, Calif., Lange, 1971.
- Somers, Anne Marshall Ransay. Health care in transition; directions for the future. Chicago, Hospital Research and Educational Trust, 1971.
- Walshe, Francis Martin Rouse. Diseases of the nervous system described for practitioners and students, with chapters on the relationship of the

liver to metabolic disturbances of the central nervous system and lead poisoning of the nervous system. Baltimore, Williams & Wilkins, 1970.

Williams, Greer. Kaiser-Permanente health plan; why it works. Oakland, Calif., Henry J. Kaiser Foundation, 1971.

## Kansas Press Looks at Medicine

### *This doctor's pride is infectious*

An intensely loyal Kansas doctor has put his finger on the pulse of the problem of keeping his home state supplied with enough physicians in the face of a nationwide shortage.

Recognize and talk up the better life and advantages of the Sunflower state, and the situation will take care of itself, contends Dr. William J. Reals.

Educators and legislators are seeking ways to train and place more medical professionals in the rural areas. That's fine—if they can make 'em stick.

Dr. Reals is 100 per cent sold on his own remedy, one can gather from his article appearing in the current Kansas Medical Society JOURNAL.

The Wichitan, and president of the state medical society, waxes eloquent about Kansas and Kansans—a backlash to disparaging remarks he heard about them from a "geographic snob" at a recent medical convention in Atlantic City.

After his drive home from the crowded, polluted and cluttered East Coast, Dr. Reals said, he got to thinking about the clean air of Kansas, its attractive towns, its wheat, beef and aircraft industries; noted statesmen like Dwight D. Eisenhower and other great leaders from the sturdy pioneers down to the present; the educational and cultural assets and progressive business enterprise here.

Yes, and of particular interest to his profession—the Menninger Foundation and Clinic, internationally known and respected as the center of psychiatry, and the Hertzler Clinic at Halstead.

He sums it up: "Our concern in Kansas is providing enough physicians to treat the people. We have a great state and its story must be told to physicians who seek a better life, a clean, crime- and pollution-free life for themselves and their families.

"Unless you and I tell the story of Kansas as it really is, we'll suffer a chronic loss of young physicians to other states.

"The job of selling Kansas is the job of every individual.

"Doctor, are you telling the true story of our state to other physicians who might want to practice here?"

Good advice, Dr. Reals! *The State Journal*—Topeka, Aug. 7, 1971.

# Woman's Auxiliary

## ... Annie Reminds You About a Stitch in Time

There are only 124 shopping days left before Christmas, doctor, did you know that? Now why would anyone bring that up right in the middle of August vacations? Because the early bird gets the best seat, that's why, and we want your Christmas card orders to boost the AMA-ERF fund.

"Now that's a new one," you say . . . "I thought AMA-ERF was a fund donation to medical schools." It is, doctor, it is. But there are lots of ways you can donate to this fund.

First, let me remind you of a few facts. Did you know that during the first ten months of 1970 over 1,372 new student loans were made to medical students? Did you know that 43 of our nation's 107 medical schools are in financial difficulties? Our donations go to help alleviate these situations. The Christmas card is one way you can really help, yet still do something that you'd do anyhow. Here's how it works:

Large boxes of sample cards from three different companies have been sent to the president or auxiliary chairman of these counties: Central Kansas, Flint Hills District, Labette, Northwest, Saline, Seward, South Central Tri-county, Southwest, Crawford-Cherokee, Douglas, Harvey, Northeast, Reno, Sedgwick, Shawnee, Southeast and Wyandotte. Contact the person in charge in your county and pick out the card or cards you like. If you are in a county that didn't request card samples, contact our state AMA-ERF chairman, Mrs. Clair Cavanaugh. The auxiliary keeps all but the 40 to 45 per cent the cards cost and the money is donated to AMA-ERF.

The cards are beautiful and of good quality. They may also be sold to people other than the medical profession and the AMA-ERF insert may be left out. Your purchase of these cards through the AMA-ERF committee also makes them tax deductible. Some areas allow complete deduction, others only the profit made by the auxiliary. Can you think of a better way to wish someone a Merry Christmas than to donate to something that stands for improving health?

Wyandotte, Sedgwick, Saline and Johnson counties have a collective card system. Each auxiliary member who is interested in joining the combined effort donates the amount of money she would spend on cards. Then all the names of the donors are put on a chosen card. The individual who is sent the card gets one instead of many, but a printed insert tells him that the money that would have been sent has been donated to AMA-ERF. Any number of people may sign one card . . . you set your own limits.

Another popular and much-used AMA-ERF effort is the "In Memoriam" card. It's also easier to do now, as you don't have to hunt up a chairman. Your own wife has a set of the four new cards. One is the usual "In Memoriam," the others are "Thank You," "Thinking of You," and "In Honor Of" cards. You fill out the appropriate card, send it to the person you have in mind, then send a check for whatever amount you choose to the state AMA-ERF chairman. It is completely tax deductible. No one but you, the chairman and your banker knows the amount of the gift. Medical families who have lost a loved one particularly appreciate this type of remembrance, for they feel that the money may help someone else.

If you have already bought your Christmas cards, then how about thinking along the line of books? Three new book ideas are promoted. One is *Today's Health Guide*. This beautiful large volume will help kids doing school work because it has accurate health information. It is almost a must for libraries, or an excellent gift for newlyweds, young parents and families. The hard cover edition is only \$5.32, the paperback \$4.82. And that includes mailing. That's not much when you consider the wealth of information it contains.

Stamp collectors of all ages will love the *Stamps in Medicine* which is sent for \$4.00 plus postage. The new set of *Wendy Well and Billy Better* books are delightful. These four books help small children over the medical humps and are especially written to explain hospital or doctor's office procedure at the child's level. One tells about x-ray, another about anesthesia, and two are general hospital or office visit information. The books take away all the boogeymen and help get children through tonsillectomies, broken arms and other medical experiences without fear. They are \$3.25 each, or \$13 for the set of four.

If you've a special lady you'd like to buy a gift for, the chairman tells us she has some super-doo-per new watches coming that women in Nebraska went wild over. We can't have them out-do us. Write her! She's Mrs. Clair Cavanaugh, 1320 Cleveland, Great Bend, 67530. She has some new Jamaican gift imports, too.

Grandma always told us that a stitch in time saves embarrassing exposure. So how about ordering those cards or books early before you forget it? (. . . Keep those cards and letters coming.) Do it soon, will you?

Yours for an AMA-ERF Christmas,  
Auxiliary Annie





### LAURENCE S. NELSON, M.D.

Dr. Laurence S. Nelson, 78, Salina physician and surgeon for 52 years, died in a Denver hospital on July 29, 1971.

Dr. Nelson was born at Iola on September 5, 1892. He was graduated from the University of Kansas School of Medicine in 1919. He began a general practice in Salina that year, and later studied surgery at the University of Vienna and other European medical centers. He was a past president of the Kansas Medical Society and had served as Kansas delegate to the American Medical Association for a number of years.

Surviving Dr. Nelson are his daughter-in-law, Mrs. L. S. Nelson, Jr., and three grandchildren.

Memorials may be made to the Rolling Hills Congregational Church, Salina.

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### EDGAR M. SUTTON, M.D.

Dr. Edgar M. Sutton, Salina, died at a Salina hospital on July 30, 1971. He was 82 years old.

He was born November 17, 1888, in Cawker City. After graduation from the University of Kansas School of Medicine in 1922, he came to Salina and was a general practitioner for many years, later specializing in anesthesiology.

Dr. Sutton is survived by a son and three grandchildren.

The family suggests memorials to Asbury Hospital, Salina.

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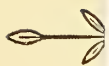
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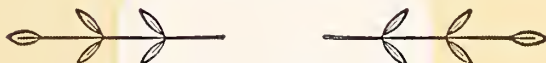
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# Patients fell asleep quick

Dalmane (flurazepam HCl) 30 mg reduced awake time—both before and after falling asleep - by fifty percent of pretreatment values in patients with insomnia.<sup>1,2</sup>

Two sleep laboratory studies recently confirmed findings of earlier studies of this type, namely, that Dalmane 30 mg was effective in patients who had trouble falling asleep, staying asleep or both. One 30-mg capsule of Dalmane usually induced sleep within 22 minutes, decreased the number of awakenings and the wake time after the onset of sleep, and provided 7 to 8 hours of sleep without need to repeat dosage during the night.

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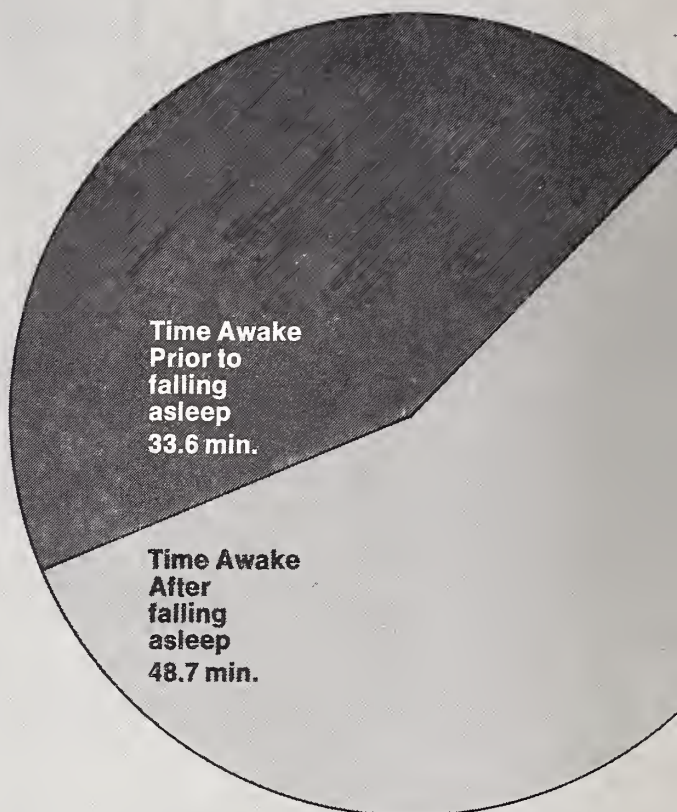
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**References:** 1. Frost, J. D., Jr.: "A System for Automatically Analyzing Sleep," Scientific Exhibit presented at Clinical Convention, A.M.A., Boston, Nov. 29-Dec. 2, 1970, and Aerospace M.A., Houston, April 26-29, 1971.

2. Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley, N.J.

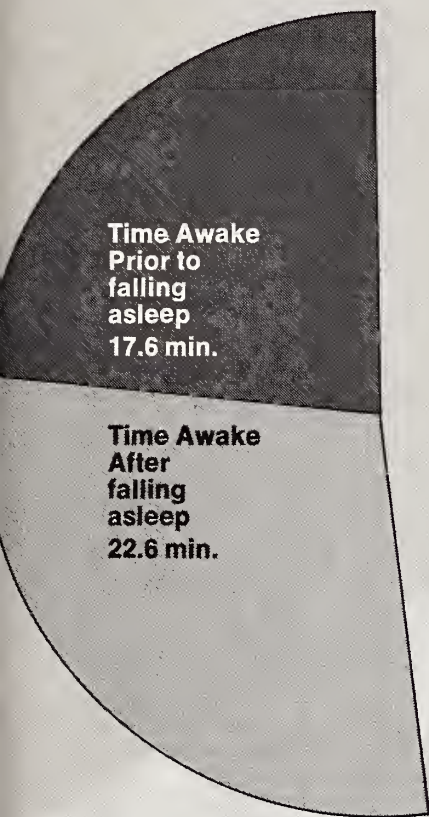
Before  
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(flurazepam HCl)





# and slept through the night

On  
Dalmane  
flurazepam HCl)



sleep laboratory measurements in cited studies

	Before Dalmane	On Dalmane
Time required to fall asleep	33.6 min.	17.6 min.
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Time of wakeful periods after		
of sleep	12.2	8.4
Time asleep	420.0 min.	447.5 min.
Time asleep percent	88.6	94.5

ical effectiveness as  
ven in the sleep laboratory

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**Adverse Reactions:** Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported were headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins and alkaline phosphatase. Paradoxical reactions, e.g., excitement, stimulation and hyperactivity, have also been reported in rare instances.

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# The JOURNAL of the KANSAS MEDICAL SOCIETY

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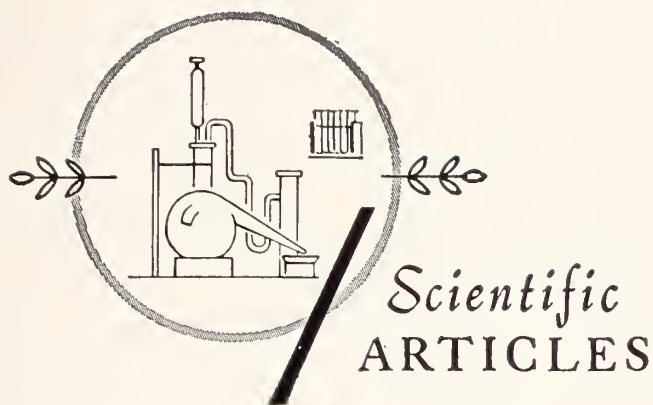
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# Cushing's Syndrome

## *Status Epilepticus in Cushing's Syndrome*

CHARLES WEINSTEIN *and* DEWEY K. ZIEGLER, M.D.,

*Kansas City, Kansas*

SEIZURES AS a manifestation of Cushing's syndrome are extremely rare. In the case reported below, the diagnosis of Cushing's syndrome was made only after the appearance of status epilepticus and in the presence of extreme hypertension. This sequence of events leads to interesting speculations as to possible mechanisms of seizures in the presence of the physiological and biochemical abnormalities seen in this disorder.

### Case Report

A 14-year-old white male was admitted to Kansas University Medical Center via the emergency room in a semi-comatose state during the evening of July 3, 1970. The history obtained from the parents revealed that during the previous year the child's growth had slowed markedly. The onset of facial erythema and acne, and the development of truncal obesity had been noted for several months previous to admission. During this time the patient had frequently complained of weakness and fatigue. Fullness of the face had been evident for about three months, and the patient had been complaining of intermittent pedal edema for about two weeks. The

patient had no history of previous seizures and there was no family history of epilepsy.

On July 1, 1970, the patient was admitted to his community hospital because of his pedal edema. At the time of that admission his blood pressure was

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**An adolescent with a malignant adrenal gland tumor developed Cushing's syndrome. Concomitant with the development of marked hypertension, and of hypokalemia, status epilepticus appeared. The possible pathophysiological mechanisms include hypertensive encephalopathy, electrolyte abnormalities in cerebral neurones, or ACTH depletion.**

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160/110 and he was found to be in no acute distress. Two days after his admission his blood pressure increased to 160/130. Tonic-clonic type seizures ensued and recurred repetitively over a period of 80 minutes. The seizures were eventually terminated by sodium amytal 500 mg intravenously. The patient was then given 1 mg reserpine intramuscularly. Once his condition was felt to be stable he was immediately transferred to Kansas University Medical Center for further evaluation.

Physical examination on his admission to this hos-

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From the Section of Neurology, Department of Medicine, University of Kansas School of Medicine, Kansas City, Kansas 66103.

pital revealed a semi-comatose individual who would respond only to painful stimuli. His blood pressure was 110/80 mm Hg. Examination of the head revealed marked plethora, moon facies, and acne on the forehead and across the bridge of the nose. Pulse, temperature, chest and heart examinations were normal. There was some soft tissue humping in the thoracic region of the back. There was edema of both hands and feet. Except for the state of consciousness the neurologic examination was within normal limits.

On admission complete blood count was normal as were SGOT, serum alkaline phosphatase and serum proteins. The serum sodium was 140 mEq/L, potassium, 2.7 mEq/L, chloride, 92 mEq/L. A glucose tolerance test showed a fasting level of 98 mg per cent; a 1 hour level of 171 mg per cent; 2 hour level of 160 mg per cent; 3 hour level of 115 mg per cent and 4 hour level of 126 mg per cent. Direct Coombs test and lupus erythematosus preparation was negative. Analysis of the urine was also normal. Roentgenograms of the chest and skull were normal, while those of the abdomen revealed generalized osteoporosis.

Lumbar puncture in the recumbent position with full relaxation revealed opening pressure of 210 with no cells, glucose 67 mg per cent, protein of 38 mg per cent.

Upon admission intravenous fluids were begun using 5 per cent dextrose in water. Over the next 12 hours the patient slowly regained consciousness. Twenty-four hours after admission his blood pressure increased to 140/105, but the patient remained asymptomatic. He was started on diphenylhydantoin (Dilantin), 100 mg twice daily, and phenobarbital 100 mg at bedtime as seizure prophylaxis.

On the third hospital day an electroencephalograph was obtained and was interpreted as being minimally abnormal due to increased nonspecific slow action and disorganization. No spike activity was observed. Brain scan was normal.

Twenty-four hour urine collections were assayed for steroids on consecutive days and showed 17-ketosteroid levels ranging from 44.9 mg to 77.8 mg per 24 hours and 17-ketogenic steroid levels ranging from 21.6 mg to 49.2 mg per 24 hours. Further evaluation revealed normal creatinine clearance, 24 hour urinary 5-HIAA and 24 hour urinary VMA. No significant change in 24 hour urinary 17-keto and 17-ketogenic steroid levels with dexamethasone (Decadron) stimulation was noted. Intravenous pyelogram obtained on the seventh hospital day showed downward displacement of the entire right kidney with lateral displacement of the upper pole.

On the tenth hospital day laparotomy was performed and a 12 x 10 x 8 cm right suprarenal mass

was removed which was markedly vascular, consisting of pleomorphic cells with hyperchromatic and often vacuolated and multiple nuclei. There were areas of necrosis and hemorrhage. The diagnosis was one of malignant, functioning adrenal tumor (cortical carcinoma).

The patient tolerated the operative procedure well and pursued an uneventful recovery. He was discharged on July 26, 1970, 13 days postoperatively on Florinef, 0.1 mg daily.

On September 28, 1970, the patient was readmitted to Kansas University Medical Center with a two week history of right upper quadrant pain and progressive abdominal distension. Examination revealed absence of the Cushingoid features seen on the first admission. At that time his blood pressure was 138/104 and his pulse was 64 per minute. The abdomen was moderately distended, and a large tender mass was palpated in the right upper quadrant.

On this admission laboratory tests showed increasing hepatic damage, markedly elevated 17-ketosteroids, 17-ketogenic steroids and plasma cortisol determinations.

Roentgenographic study of the chest showed multiple densities throughout both lung fields. Intravenous pyelography revealed delayed function of the right kidney and lateral displacement of the right kidney and right ureter. Liver scan showed multiple focal areas of decreased uptake.

The patient was begun on Cobalt 60 treatments directed toward the liver. On the tenth hospital day he had two tonic-clonic type seizures within a 40 minute period. The patient was again started on Dilantin and phenobarbital for seizure control. Cobalt therapy was discontinued after only eight treatments because the patient failed to show any improvement. He expired several days later. Autopsy permission was refused.

## Discussion

Interest in this case centers around the possible etiology of the seizures. The possibility of a cerebral metastasis exists, but the absence of focal neurological abnormalities, or signs of a focal lesion on brain scan and EEG argues against this diagnosis.

There are several mechanisms by which Cushing's syndrome in this patient may have been related to convulsions although the occurrence of seizures as a complication of Cushing's syndrome is very rare. A review of the literature reveals only two cases in which seizures have been reported.<sup>1</sup> Probably the leading and most interesting possibility is that this child developed that clinical entity, now rare, called "hypertensive encephalopathy."

It is of interest that in children with severe hyper-



tension of renal origin, seizures were the presenting manifestation in 12 of 55 patients studied,<sup>2</sup> while in 197 adults with malignant hypertension, only 18 had seizures and four of these were found at autopsy to have focal encephalomalacic lesions.<sup>3</sup> This fact might indicate an increased susceptibility of the immature brain to some epileptogenic pathophysiological event secondary to abruptly rising blood pressure. It is possible that the patient may have had some pre-existing "seizure diathesis" which was activated by the acute onset of hypertension.

Byrom (1954),<sup>4</sup> in his work with rats with severe experimental hypertension, frequently observed the onset of convulsions following an acute increase in blood pressure. He was able to show that with increasing blood pressure there occurred an orderly, diffuse arterial constriction, which, in severe hypertension, was converted to uncontrolled focal spasm of the vessels and later abnormal segmental dilatation. These areas of spasm and dilatation, according to Byrom, caused increased permeability of the vessels, which then led to cerebral edema and subsequently to seizures. Others have demonstrated cerebral vascular spasm in other species subjected to experimental hypertension. It is easy to postulate a sequence of events which might have led to seizures in the patient being discussed. The onset of acute severe hypertension paralleled experimental situations in animals and could have resulted in similar vascular changes and cerebral edema which in turn led to neurologic dysfunction resulting in seizure activity. This concept is further supported by numerous postmortem studies<sup>5-8</sup> which have shown that the water content and weight of brains in many hypertensive patients is significantly increased.

A second possible mechanism for seizures would be one related to biochemical changes. The depletion of certain of the electrolytes deranges the balance of extracellular and intracellular cations essential to neuronal stability and may predispose to seizures in nonepileptic as well as epileptic patients. Electrolyte disturbances, which include hypocalcemia, hypomagnesemia, hypernatremia and hyponatremia have been closely correlated with changes in seizure threshold in both clinical and laboratory studies.<sup>9-12</sup> In the case of this patient, the serum sodium was within normal limits varying between 135-142 mEq/L, but the serum potassium was markedly depleted (2.7 mEq/L) and remained below normal for six days. These values, however, may not give an accurate picture as to the true distribution of the electrolytes. Although it is undocumented, it seems possible that the severe loss of serum potassium may have produced a compensatory shift of intracellular sodium cations to the vascular compartment. This then would result in a normal serum so-

dium, but would create an intracellular hyponatremia.

A third possible seizure mechanism relates to circulating ACTH. The reciprocal relationship between the amount of circulating adrenal cortical hormones and the blood level of adrenocorticotrophic hormone (ACTH) has been repeatedly demonstrated and is generally accepted. In applying this relationship to the case being considered, one would conclude that the massive quantities of adrenal corticoids being produced by the tumor would result in a severe inhibition of the anterior pituitary, this markedly decreasing the amount of circulating ACTH. Since it has been shown in several large studies<sup>13-15</sup> that ACTH possesses anticonvulsant action, and further, since it has been demonstrated by Woodbury, 1954<sup>12</sup> that ACTH increases the seizure threshold in rats, one might hypothesize that extremely depressed blood levels of ACTH, as were present in this patient particularly, might predispose to seizure activity.

## References

1. Starr, A. M.: Personality changes in Cushing's syndrome. *J. Clin. Endocrin.* 12:502-505, 1952.
2. Still, J. L. and Cottom, D.: Severe hypertension in childhood. *Arch. Dis. Child.* 42:34-39, 1967.
3. Kincaid-Smith, J.; McMichael, J. and Murphy, E. A.: The clinical course and pathology of hypertension with papilloedema (malignant hypertension). *Quart. J. Med.* 27:117-153, 1958.
4. Byrom, F. B.: The pathogenesis of hypertensive encephalopathy and its relation to the malignant phase of hypertension, experimental evidence from the hypertensive rat. *Lancet* 2:201-211, 1954.
5. Feigin, I. and Popoff, N.: Neuropathologic observations on cerebral edema. *Arch. Neurol.* 6:151-160, 1962.
6. Adachi, M.; Rosenblum, W. I. and Feigin, I.: Hypertensive and cerebral oedema. *J. Neurol. Neurosurg. Psychiat.* 29:451-455, 1966.
7. Rosenblum, W. I.; Donnenfeld, H. and Aleu, F.: Effects of increased blood pressure on cerebral vessels in mice. *Arch. Neurol.* 14:631-643, 1966.
8. Fishberg, A. M.: *Hypertension and Nephritis*. Philadelphia, Lea & Febiger, 1954.
9. Miller, R. B.: Central nervous system manifestations of fluid and electrolyte disturbances. *Surg. Clin. of N. Amer.* 48:381-393, 1968.
10. Katzman, R.: Effect of electrolyte disturbance on the central nervous system. *Ann. Rev. Med.* 17:197-212, 1966.
11. Faris, A. A. and Poser, C. M.: Experimental production of focal neurologic deficit by systemic hyponatremia. *Neurology (Minneapolis)* 14:206-211, 1964.
12. Woodbury, D. M.: Effect of hormones brain excitability and electrolytes. In: *Recent Progress in Hormone Research, The Proceedings of the Laurentian Hormone Conference*, vol. X, New York, Academic, 1954.
13. Millichap, J. G.: Anticonvulsant drugs. In *Physiological Pharmacology*, vol. 2, W. S. Root and F. A. Hofmann (eds.), New York: Academic, 1965.
14. Miribel, J. and Poirier, F.: Effects of ACTH and adrenocortical hormones in juvenile epilepsy. *Epilepsia (Amsterdam)* 2:345-353, 1961.
15. Stamps, F. W.; Gibbs, F. A. and Gibbs, E. L.: Treatment of hypersarhythmia with ACTH. *J.A.M.A.* 171:408-411, 1959.

# Anticoagulation Complications

## *Interperitoneal Injury: A Complication of Heparin Therapy*

JOHN R. KIRKPATRICK, M.D., WALLACE F. COX, M.D., and  
LAWRENCE L. TRETBAR, M.D., *Kansas City, Kansas*

THE USE OF HEPARIN, administered either intravenously or subcutaneously, has increased with the improved recognition of thromboembolic disease. When used properly, heparin has proved to be a safe and reliable drug. Nevertheless, as with most medications, complications have occurred. Usually these are a result of an exaggerated anticoagulation effect. This report, however, is concerned with a complication related to the route and site of administration of heparin.

### Case Report

CASE 1: A.H. (#B6986), a 64-year-old white man with a previous history of bilateral thrombophlebitis of the calves, was admitted to Bethany Hospital with fever, dyspnea and pleuritic chest pain. An x-ray of the chest revealed an infiltrate in the right lung. A presumptive diagnosis of a pulmonary embolus was made and intravenous heparin therapy was instituted. He received 12,500 units of aqueous heparin every six hours for the first five days. The Lee-White clotting time remained between 20 and 30 minutes. On the sixth day, the dosage was changed to 17,500 units of heparin, given subcutaneously into the abdominal fat pad. On the eighth hospital day, he experienced severe abdominal pain following a heparin injection. He refused further heparin and complained of a persistent "metallic" taste. During the next 24 hours, he continued to complain of lower abdominal pain and nausea. Examination of the abdomen revealed multiple subcutaneous hematomas, distention, hypoactive bowel sounds, and lower abdominal tenderness. The physicians in attendance believed a minor intraperitoneal injury had occurred from the heparin injection. During the next 24 hours the pain and distention subsided without specific therapy. He had no change in white count or hematocrit during this acute episode. Coumadin was begun and the patient was discharged several days later in good health.

From the Departments of Surgery: Bethany Hospital, and the University of Kansas Medical Center, Kansas City, Kansas.

CASE 2: H.B. (#B6552), a 56-year-old white male, was admitted with severe respiratory failure. He was known to have chronic bronchitis and emphysema. This respiratory problem was complicated by congestive heart failure and digitalis intoxication. One week after hospitalization, a diagnosis of myo-

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**Utilizing the abdominal fat pad as an injection site for heparin resulted in two severe complications. If this fat pad is selected as a site for heparin administration, all nursing personnel should be cautioned to use short needles which are inserted obliquely into the skin. For patients with abdominal distention or with thin abdominal walls, intravenous heparin administration is mandatory.**

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cardial infarction was made and heparin therapy was begun. He received 10,000 units subcutaneously in the abdominal fat pad every 12 hours. The next day he was noted to have a 2 cm subcutaneous hematoma in the left lower quadrant. That night he developed abdominal distention and vomiting. He was found to have lower abdominal tenderness with guarding, and bowel sounds were absent. A barium enema x-ray study of the large bowel revealed a severe paralytic ileus with a "giant" cecum, 10 cm in diameter. He failed to improve and abdominal exploration was advised. At surgery a large properitoneal hematoma was present in the left lower quadrant beneath the small subcutaneous hematoma previously described. A small tear was found in the peritoneum beneath the hematoma. Examination of the gastrointestinal tract revealed a tear in the mesentery of the ileum with a mesenteric hematoma. Decompression of his large intestine by needle colotomy was performed. After surgery, he did well for five days with the return of normal bowel activity. On the sixth day, he had an exacerbation of his respiratory failure and died, despite vigorous attempts at resuscitation. An autopsy was refused.



## Discussion

Complications from heparin therapy can be conveniently discussed as either systemic or local. Systemic complications result from prolonged anticoagulation effect during the heparin therapy. Hemorrhage from the gastrointestinal or genitourinary tract is the most frequent systemic complication although bleeding into the adrenal glands or cerebral cortex also can occur.<sup>1</sup> Local complications usually occur as hematomas at the injection site. This may be a result of faulty administration into muscle tissue or represent bleeding from excessive anticoagulation. Recently reports of rectus muscle hematomas<sup>2</sup> during heparin therapy have incriminated prolonged anticoagulation since some of the patients were receiving intravenous heparin.

The cases presented in this report are of interest since they represent a complication in the administration of the drug. Both patients in this report are felt to have received their injury as a result of an incorrect injection into the abdominal fat pad. H.B.

(Case 2) either received his intraperitoneal injury from a needle tear or from a direct injection into the mesentery. A.H. (Case 1) had such striking symptomatology after an abdominal fat pad injection that it is reasonable to assume that the needle penetrated the abdominal wall and caused a minor intraperitoneal injury.

This type of injury is probably related both to needle length and to abdominal wall thickness. Although the patient in Case 1 (A.H.) had an abdominal wall of normal thickness, H.B. (Case 2) had an extremely thin abdominal wall which contributed to the ease of penetration by the needle.

## References

1. Jick, Herschel, *et al.*: Efficiency and toxicity of heparin in relation to age and sex. *New Eng. Med.* 279:887, October 17, 1968.
2. DeLaurentis, Dominic A. and Rosemond, George: Hematoma of the rectus abdominus muscle complicated by anti-coagulation therapy. *Amer. J. Surg.* 112:859, December 1966.

## PREPARATION OF MANUSCRIPTS FOR THE JOURNAL

**Exclusive Publication:** Articles are accepted for publication on condition that they are contributed solely to this Journal. Publication elsewhere will be subsequently authorized in the discretion of the Editor.

**Correspondence:** Address all correspondence relating to publication of scientific papers to the Managing Editor.

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4. Doe, J. E.: What I know about it. *J. Kans. M. S.*  
54:717-719, December 1954.

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Society members throughout the state are encouraged to write up their interesting cases and submit them for publication. The editorial staff welcomes the opportunity of helping you prepare your article for the printer.

# The Spirit of the Past

## —Kansas in the Fight Against Tuberculosis

FLOYD C. BEELMAN, M.D., *Topeka*

WE HAVE MUCH TO BE proud of in Kansas for Kansans stand tall in the fight against disease. It has been my privilege to have known two of these outstanding fighters against one of man's oldest and greatest destroyers, tuberculosis. The first was Dr. Samuel J. Crumbine from the prairies of Dodge City—a dynamo of energy, with a keen imagination and intellect and courage beyond description. The spiritual aspects that make for great leadership were his. His courage in taking on the leading killer of mankind was instrumental to the beginning of this organization. It was in 1907 while at the International Congress on Tuberculosis in Washington that the inspiration came to Dr. Crumbine to unite the people of Kansas in the fight against tuberculosis. I am certain that the eyes of this pioneer physician swept across his beloved prairies and saw them one day free of this disease. In December of 1908 the Kansas Association for the Study and Prevention of Tuberculosis was started with Dr. Crumbine as its first president. His fight against the spread of germs, "Don't Spit on the Sidewalk," to abolish the common drinking cup and towel—the flyswatter and "Swat the Fly" slogan spread across the nation.

Little did Dr. Crumbine realize that he had started a financial enterprise when the boys of our small town in Northern Ohio collected a penny for each 100 flies killed and brought to the hardware store selling the flyswatters. I am sure that many of you can remember those days. The spiritual drive, inspiration, enthusiasm, and determination of Dr. Crumbine is almost unbelievable. His campaign against the use of the common towel, along with many sanitary innovations, made him a world-wide figure and inspired others in the fight against disease. Many poems were written and printed and mailed to him, among which was this one from Georgia White of Randolph, Kansas. The first verse to the tune of "The Old Oaken Bucket" ran as follows:

How dear to our hearts are things of our childhood,  
When fond recollections present them to view,  
The old district school-house, the pail and the dipper,  
The same cud of gum which in turn we would chew.

Address given by Dr. Beelman at the dedication ceremony for the new Kansas Tuberculosis and Health Association building.

No fear of a microbe ever beset us,  
No state board of health interfered then at all;  
We bathed dirty faces in one common basin  
And turned to the towel that hung on the wall,  
The germ-laden towel that hung on the wall.

These early years of Dr. Crumbine's active campaign against tuberculosis saw the Legislature pass, in 1911, an act creating a State Sanatorium, with added appropriations during later years and the first case of tuberculosis arriving at Norton in 1915. Dr. C. S. Kenney, the first superintendent followed by Dr. C. F. Taylor, developed our first state-wide clinical and medical confrontation which brought us into closer grips with this enemy. In 1918 the name of the Association was changed to the Kansas State Tuberculosis Association. Dr. Crumbine continued a vital force in the progress being made against the disease until he left in June of 1923 to assume duties with the American Child Health Association in New York City.

But, in closing our thoughts on the spirit of this great man, I turn to the last pages of his book, *Frontier Doctor*. He is describing the joys of his days in Kansas and riding over its virgin prairies and, quotes a Kansas woman, then living in California, Esther Clark, who expressed her longing for the prairies much better than he could, as follows:

Sweeter to me than the salt sea spray, the fragrance of  
summer rains;  
Nearer my heart than these mighty hills are the wind-  
swept Kansas plains;  
Dearer the sight of a shy, wild rose by the roadside's  
dusty way,  
Than all the splendor of poppy-fields ablaze in the sun  
of May.  
Gay as the bold poinsettia is, and the burden of pepper  
trees,  
The sunflower, tawny, and gold and brown, is richer to  
me than these.  
And rising over the song of the hoarse, insisting sea,  
The voice of the prairies is calling, calling me.

Is there any doubt in your mind that the spirit of the first leader of this Association remains within this land of prairies and blue skies with Kansas people and will invest this building, for his dream is almost a reality.

Joining in the battle against disease in the early



years, mighty in spirit, courage and determination emerged the second fighter against tuberculosis, Dr. Charles H. Lerrigo. Dr. Lerrigo, from the beginning of this association in 1908 until his retirement in 1947, was a dominant spirit in the development of active programs aimed at controlling tuberculosis. As a member of its Executive Committee, he was elected President as early as 1910. He led the way out of the early educational aspects of feeling out the enemy into an era of actual engagement to wipe it out. Dr. Seth Cox was the first clinical director, starting his activities in 1919, from the first offices of the Association in the Mills Building. The "Early Diagnosis Campaign," was started in 1928 and continued through the depression years. It was at this time in 1928 that the Association, seeing a broader aspect to its objectives, changed its name to that of the Kansas Tuberculosis and Health Association. The program of seeking out the enemy and destroying it increased rapidly with the advent of tuberculin-testing and chest x-rays. This Association has always been closely allied to the Kansas State Board of Health and through Dr. Lerrigo, a Division of Tuberculosis was established. He anticipated that this Division would assume the clinical activities of the Association and for that purpose the Association financed its beginning. In the early 1940's tuberculosis case-finding, follow-up and chest x-rays reached a peak. A medium test dose of tuberculin was developed with consultation from the Henry Phipps Institute. We started talking about eradication of tuberculosis. From 70,000 to 125,000 tuberculin tests were given each year through a planned program with this Association which included county-wide education, tuberculin testing, follow-up of positive reactors with chest x-rays and care of cases through referred physicians. One of the first states to acquire and use the mobile photofluorographic unit, case-finding in all counties and among all citizens was intensified under the leadership of Dr. Homer Hiebert. Central registration of active cases and positive reactors was started. Dr. H. I. Spector, director of the Koch Tuberculosis Hospital in St. Louis, was a frequent visitor and consultant. Through his efforts and those of Dr. C. F. Taylor, interest on the part of practicing physicians was encouraged and a chapter of the American College of Chest Physicians was started. Postgraduate courses and expansion of care facilities for tuberculosis cases at the University of Kansas Medical Center were improved. Active tuberculosis control in Southeast-

ern Kansas was increased, under the leadership of Dr. Joseph Spearing practicing in Columbus, and the establishment of a sanatorium at Chanute. Dr. Lerrigo was active in all of this and from experience I can tell you he was a gentle, but fearless and persistent fighter against disease. Backed by this Association, no problem in the control of tuberculosis was ever too big for him to tackle. His life was this organization and his spirit remains with us.

On the shoulders of your present officers and your active director, Waldo Wilmore, falls the mantle of these two great Kansans. And what of the future? In 1942 we predicted we should reach a minimal baseline in cases and deaths from tuberculosis in the seventies and I believe we will. Have we worked ourselves out of a job? Not by a long shot. I am happy to note that you have tackled the cigarette problem along with the American Heart Association. Many other significant health problems exist which we must do something about. Like tuberculosis in many of its control problems, let me mention one seemingly unsurmountable health, social, economic and industrial problem—ALCOHOLISM. The governor of this state could start exactly where Governor Hoch did on December 3, 1908, with a statewide conference on alcoholism and launch a campaign against this disease that today creates as much or more havoc among the citizens and families than did tuberculosis in 1908. As for this Association, it will always be the lamp-lighter, the watchman on the tower, the leader of community forces to protect and secure good health and well-being for all Kansans. This first half of the struggle is finished. Let me close with the last lines of Dr. Lerrigo's book, *The Better Half of Your Life*, from Robert Browning's *Rabbi Ben Ezra*.

Grow old along with me,  
The best is yet to be,  
The last of life for which the first was made.  
Our times are in His hand—  
Who saith, "A whole I planned."  
Youth shows but half;  
Trust God: See all, nor be afraid.

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The Kansas Society of New York City awarded Dr. Crumbine a commemorative plaque for the abolishment of the common drinking cup. A framed photograph of Dr. Crumbine and Governor Payne Ratner receiving the award was presented to the Kansas Tuberculosis and Health Association by Dr. Beelman. The signed photograph had been a gift to Dr. Beelman from Dr. Crumbine.

A check in the amount of one hundred dollars, which was received as a gift from Dr. Lerrigo for care during his last illness, also was given to the Association by Dr. Beelman.

# KUMC Trauma Conference

## *Severe Electrical Burns With Impending Renal Failure*

Edited by F. W. RECKLING, M.D. and ARLO S. HERMRECK, M.D.,  
Kansas City, Kansas

**Mr. Cann (4th Year Student):** The patient for presentation today is a 24-year-old white male who sustained severe electrical burns while working with a high voltage power line (estimated 7,200 volts).

According to his co-workers, the patient was unconscious for a few seconds following the injury. He was taken to a local hospital where intravenous fluids were administered through a cutdown site at the ankle. The patient was transferred to KUMC by ambulance and had received 3,000 cc of Ringer's lactate solution intravenously by the time he arrived. In the emergency room, the patient was conscious, conversant, and could answer questions intelligently. A Foley catheter was placed and 100 cc of black colored urine was obtained. On examination, the patient had extensive thermal injury to both arms and to the right foot. There were severe flexion contractures of both wrists and elbows. The head of the left humerus (*Figure 1*) and metacarpals of the left hand (*Figure 2*) were exposed because of the extensive soft tissue injury. The remainder of the left arm had deep third degree burns which extended to the bone. The right hand also exhibited severe burns. Both arms were pulseless and edematous. Examination of the patient's right foot disclosed a third degree burn on the plantar surface of the foot. The second, third, and fourth toes were also involved and were charred very badly (*Figure 3*).

He also had several exit sites (one in the left axilla, one in the right axilla, and one in the groin) where the electrical current was thought to have exited from the body.

**Dr. Mebust:** What was the patient's blood pressure and pulse upon admission?

**Mr. Cann:** The blood pressure was 150/110 mm Hg and his pulse was 110 beats per minute.

**Dr. Friesen:** How did you obtain the blood pressure?

**Mr. Cann:** We put a large cuff on the left leg.

**Dr. Friesen:** Was he in pain?

**Mr. Cann:** No. He had some mild facial pain from the flash burns. He really had no concept at that time of the seriousness or extent of his injury.

**Dr. Friesen:** Was he standing on the ground when this happened?

**Mr. Cann:** Yes, he was on the ground.

**Dr. Friesen:** But only one foot was damaged?

**Mr. Cann:** His right foot only.

**Dr. Friesen:** Would not you expect an injury to both feet, unless he was standing on one foot?

**Mr. Cann:** Yes. Obviously, one foot was grounded and the other was not. Because the electricity takes the path of least resistance, it exited the right foot which was grounded.

**Dr. Reckling:** Could you tell us what resuscitative measures were carried out in the emergency room?

**Mr. Cann:** We immediately started 1,000 cc of plasmanate, and followed this with an additional 1,000 cc of Ringer's lactate solution. We also gave him 40 mg of Lasix\* intravenously to increase his urine output and also clear his urine.

**Dr. Robinson:** Would you describe that urine again?

**Mr. Cann:** It had the appearance of very strong black coffee.

**Dr. Robinson:** Would you say it was almost black?

**Mr. Cann:** Yes, it was.

**Dr. Friesen:** Was a myoglobin determination done?

**Mr. Cann:** No.

**Dr. Maxwell:** What does myoglobinuria look like, Dr. Robinson?

**Dr. Robinson:** I don't know. I can say that hemoglobinuria, particularly in the oliguric patient, results in extremely dark urine. I cannot tell you specifically what myoglobin in the urine looks like, but I have seen black urine before with electrical burns, and whether it's from hemoglobin or myoglobin, I don't know.

\* Furosemide.



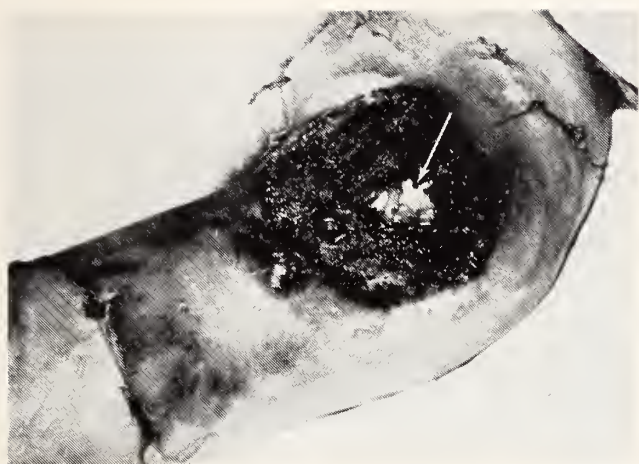


Figure 1. Electrical burn of left arm with muscle charring and exposure of humeral head (arrow).

**Dr. Reckling:** Dr. Mebust, have you ever seen myoglobinuria?

**Dr. Mebust:** No, I have never personally seen a patient with myoglobinuria. I would agree with Dr. Robinson that the problem here is hemoglobin and perhaps, myoglobin. As you know in malaria or black water fever, the appearance of the urine is caused by a breakdown of red cells, so I am assuming that this would be in favor of blood or breakdown products of blood producing the black urine.

**Dr. Kirkpatrick (General Surgery Resident):** Did he have any changes on his EKG as a result of his injury?

**Mr. Cann:** No, the EKG was normal.

**Dr. Reckling:** What was done for this patient?

**Mr. Cann:** The patient was taken to the operating room that evening, where an intrascapulothoracic amputation was carried out on the left side and a below the elbow amputation on the right side because of the severe tissue damage. These procedures were done with two operating teams working simultaneously.



Figure 2. Electrical burn of left hand with exposure of tendons and metacarpals.

In addition, a fasciotomy was done on the intact portion of the right arm from just below the elbow to the deltoid region. Extensive debridement of the dorsal surface of the right foot and a metatarsal phalangeal disarticulation of the second, third, and fourth toes was performed. All wounds were packed open, and pressure bandages were applied. During the course of the operation, the patient received 3,000 cc of whole blood. It was estimated that the blood loss was approximately 3,000 cc, so we replaced what was lost. He also received approximately 7,000 cc of Ringer's lactate solution during the operation.



Figure 3. Right foot with severe charring of lateral three toes.

**Dr. Reckling:** Are there any questions about what was done in the operating room?

**Dr. Friesen:** How did you know the muscles of the forearm were dead? What tests did you use?

**Mr. Cann:** When the nonviable muscle was cut, it did not bleed or contract. Viable muscle will twitch when cut or stimulated since it is an excitable tissue. Nonviable muscle, when cut, does not respond. Visually, there was a clear line of demarcation which was quite graphic. The tissue above the mid-portion of the right forearm appeared pink; everything below was black.

**Dr. Reckling:** We had a difficult time doing this forequarter or intrascapulothoracic amputation. As we took off the clavicle to get down to the subclavian artery and vein, we lost our landmarks due to the marked swelling and edema. However, by finding the brachial plexus and working proximally, we

were able to identify the subclavian artery and vein, and then things went well.

**Dr. Robinson:** Let me say a few words at this point. During the operation, when we were all busy and the fluid balance was left to the anesthesia team, they were somewhat concerned about the huge quantities of fluid that we insisted upon being administered. At one point during the operation, they decreased the rate of fluid administration and the urine output virtually ceased, and his urine turned black again. After some verbal encouragement, the rate of fluid administration was increased and the urine again became clear.

**Dr. Reckling:** Mr. Cann, do you want to carry on the discussion concerning the fluid problem in this patient?

**Mr. Cann:** We knew our immediate problem was fluid replacement in this man. Although he had had 3,000 cc of crystalloid fluid replacement prior to arrival, the patient was obviously still hypovolemic. According to the Brooke Army formula, which we worked out just as an exercise, this man should have received during the first 24 hours, 3,784 cc of fluid, in addition to his regular maintenance requirements. Approximately one-fourth of this should have been colloid, and the remaining three-fourths of this crystalloid solution such as Ringer's lactate. Had we followed this formula, this would have been inadequate replacement for this patient. The goal in this patient's fluid therapy was to maintain a high urine output to protect the kidneys against impending renal failure without overloading his heart. During the first eight hours of this patient's injury, he received 10,000 cc of Ringer's lactate solution and 1,000 cc of plasmanate. During this eight hour period, the patient put out a total of 4,840 cc of urine. This is a lot of urine formation during an 8 hour period and was due to the effects of the diuretic, furosemide, and the massive fluid replacement which we carried out. We intentionally maintained this patient's urine output at a very high level to prevent the dreaded complication of acute renal failure.

During the 24 hour period following injury, this man received a total of 23,000 cc of Ringer's lactate solution, and 11 units of blood. He lost approximately 3,000 cc of blood in the operating room and also put out a total of 11,560 cc of urine for a total loss of about 14,500 cc of fluid in the first 24 hours. Interestingly, the patient's hematocrit still showed evidence of hemoconcentration during resuscitation despite massive fluid administration. In addition, this man's urine specific gravity was about 1.025 despite the high urine output.

**Dr. Reckling:** If this man would have been given more colloid solution such as plasmanate, wouldn't

he have needed less fluid and wouldn't this have been less hazardous to the patient?

**Mr. Cann:** Perhaps, but with colloid administration, one would have not gotten the massive diuresis, the clearing of urine, and the cleansing of the nephrons of the toxic pigments.

**Dr. Reckling:** How was this patient monitored?

**Mr. Cann:** This patient had hourly blood pressure determinations, heart rate, urine output and urine specific gravity. In addition, he had serial hematocrits carried out.

**Dr. Reckling:** Did he have a central venous pressure catheter in place?

**Mr. Cann:** No, he did not. We were using the veins in his uninvolved leg for IV's, so we didn't have a CVP catheter. We could have placed a catheter into one of his jugular veins but elected not to do so. Since this was a young man with a good heart and kidneys prior to injury, we felt secure in forcing fluids without a CVP measurement.

**Dr. Reckling:** Dr. Hermreck, do you have any comments at this time?

**Dr. Hermreck:** Yes, I want to make some comments. Here is a man with the diagnosis of impending acute renal failure by all clinical criteria. This is a fascinating case where various therapeutic modalities were used, such as diuretics and massive fluid resuscitation, to alter the renal response to injury and prevent acute renal failure.

Rosoff and Waters did some classic work back in the 1950's to show that hypovolemia or shock in the presence of such compounds as free hemoglobin will result in acute renal failure and, of course, this is exactly what this patient had. Stahl has recently carried out some very interesting studies where he pretreated high risk patients prior to and during surgery with furosemide to reduce the risk of acute renal failure. He, like many others, feels that as long as a satisfactory urine output can be maintained the kidney can withstand a major insult without damage. It should be mentioned, however, that the use of the drug furosemide, particularly in hypovolemic patients, is not without some hazards. It can cause severe hypovolemia in an already marginal patient due to the loss of urine, and can also cause deafness if used concomitantly with the antibiotic gentamicin.

**Dr. Reckling:** What is furosemide? Is it Lasix?

**Dr. Hermreck:** Yes. It works on the ascending loop of Henle and is a metabolic blocking agent (*Figure 4*). It blocks active sodium reabsorption in this region of the nephron. Since the sodium is not absorbed, it remains in the nephron and acts as an osmotic diuretic.

The concept of acute renal failure, which obviously you were trying to prevent here, has recently changed considerably. The basis for the sustained



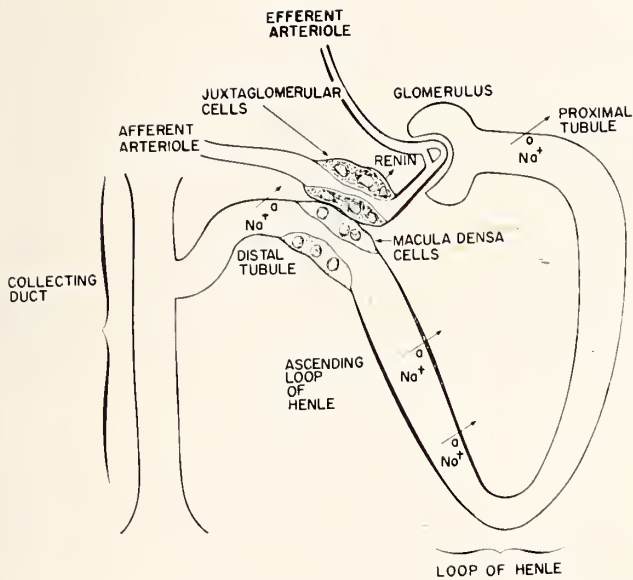


Figure 4. A diagrammatic representation of a nephron. The juxtaglomerular cells of the afferent arteriole are responsible for renin production. Renin release is influenced not only by perfusion pressure in the afferent arteriole but also by the amount of sodium reaching the distal tubule or macula densa cell area. The sites of active sodium reabsorption are indicated by arrows. Furosemide is thought to block sodium reabsorption predominately in the ascending loop of Henle.

anuria or oliguria during acute renal failure has never been fully elucidated. Some of the explanations set forth in the past to explain the oliguric state are:

1. cessation of glomerular filtration,
2. total reabsorption of the filtrate,
3. occlusion of the nephron lumen with debris, cellular cast, or by interstitial edema.

Recently Hollenberg and Merrill, from Boston, have shown in patients with acute renal failure that a diffuse reduction in acute renal cortical blood flow exists. They observed this phenomenon in acute renal failure whether due to nephrotoxins, sepsis, shock, trauma, hemolysis, or following a prolonged warm ischemic period of the kidney prior to transplantation. Because of the intense afferent arterial spasm, the filtration pressure drops to very low levels and the glomerular filtration rate virtually ceases.

Now, the question is, why do these vessels go into spasm? Some individuals believe that the renin-angiotensin system plays a role. It is well known that the amount of sodium reaching the macula densa cell region of the nephron influences renin production. Perhaps this is the way massive fluid administration or diuretics such as furosemide help to prevent renal shutdown.

**Dr. Reckling:** Dr. Mebust, do you agree with Dr. Hermreck's comments on this patient's disturbed renal physiology?

**Dr. Mebust:** Yes, I essentially agree with Dr. Hermreck, but I want to make a few general comments. I think the diuresis is very important and this is why Lasix was used. I believe, in acute renal failure, you have two things: one is shock, and the other is pigment. Pigment, such as hemoglobin or myoglobin, or the cellular stroma (I am not sure what it is, the cellular stroma or the hemoglobin itself) may be toxic to the tubular cell. Now, in the patient that is seen early, if you establish a good urine flow, you can prevent this problem. If the patient has good kidney perfusion, he will have a rapid transit of the myoglobin or hemoglobin, or whatever it may be, and prevent injury to the nephron cells. I don't believe this business of sludging of the cells or casts in the tubules as the cause of renal shutdown. I think it is more likely a vasospasm plus toxic changes. Also, occasionally when you have shock, with reduced glomerular filtration, the proximal tubule can be injured. The patient can develop the so-called high output renal failure and you may not recognize the fact that you are indeed dealing with a very serious problem.

**Dr. Maxwell:** Why, with over 11,000 cc of urine formation per day, was the specific gravity of the urine so high?

**Dr. Hermreck:** I think this is primarily a solute diuresis. This is what furosemide characteristically causes, and this patient was given furosemide very early.

**Mr. Cann:** We measured the urinary electrolytes, and the urinary sodium was around 80 mEq/L, or quite high.

**Dr. Friesen:** How does the hemoglobin get into the urine?

**Dr. Hermreck:** It is filtered through the glomerular membrane. This membrane behaves as if it has pores present ranging in diameter from 80 to 100 angstroms. Substances with molecular weights of 40,000 or higher are not readily filtered. Lower molecular weight substances such as glucose, mannitol, and sodium, go right on through. Interestingly, hemoglobin has a molecular weight of 68,000 and only about 3 per cent of this substance is filtered per passage through the kidney. Myoglobin, having a lower molecular weight is more readily filtered.

**Dr. Reckling:** Well, what is his situation now?

**Dr. Manchester (Plastic Surgery Resident):** Very good. The second degree burns of his face are healed. He is eating a normal diet. He is alert and cooperative, and we are able to change his dressings now on a regular basis.

**Dr. Reckling:** What are your plans from here on?

**Dr. Manchester:** We are planning to just follow him for awhile, debriding any dead muscle that

forms, and then we will start the skin grafting. We are also hoping to save the elbow on the right side and place a Steinman pin or a K-wire through the ulna, leaving it in extension so that we do not get a flexion contracture.

**Dr. Reckling:** The remaining elbow is very important to this man. If he is going to get a contracture of the elbow, let him get the contracture in extension, rather than flexion. You can step up an elbow prosthesis and compensate for an extension contracture, whereas you cannot step it down and compensate if he has a contracture in flexion. I doubt if the patient can use any type of prosthetic device on his left side. What he can use on his right side depends upon what can be salvaged. One can activate a prosthesis either by elbow flexion; humeral flexion, abduction or extension; and scapula abduction. If he has lost all of these, then you can sometimes use a thigh harness. However, if the elbow can be preserved, it will mean a great deal to this man.

**Dr. Robinson:** I would like to make just a few closing comments. I think the patient has had good care from the beginning. The physician initially treating this man called right away and said, "What shall we do? I have never handled an injury like this here." We agreed that the first thing to do was a cutdown, and place a large catheter in a suitable leg vein and start administering fluids. In addition, it was stressed that someone had to stay with this patient to make sure that the IV stayed open on the way to the Medical Center. So they sent a very reliable emergency room nurse along with the patient to keep the IV open and the fluids going. During the three and a half hour ambulance ride, the nurse got over three liters of fluid into him, which I think was important at this stage. If she had gotten two or three times that much, I think it would have been better yet. Now, the first thing that we did here was to step up his intake of fluid quite considerably and give him some plasmanate to bolster the colloid side of his circulating fluid, plus quite a lot of Ringer's lactate. We gave about three liters almost immediately after arrival in the emergency room. Having hydrated him, we gave him Lasix to try to prevent

the acute renal failure that we thought was pending because of the oliguric state and the dark concentrated urine. We have had experience with this type injury in the past, and oliguria with black colored urine is a bad prognostic sign. With generous fluid replacement and diuretics, the urine quickly cleared, and we were astounded that he was putting out 1200 to 1400 cc of urine per hour for awhile. Fortunately, he was a vigorous young man who was able to take this kind of massive fluid replacement. If he had been older, he might not have tolerated this approach at all.

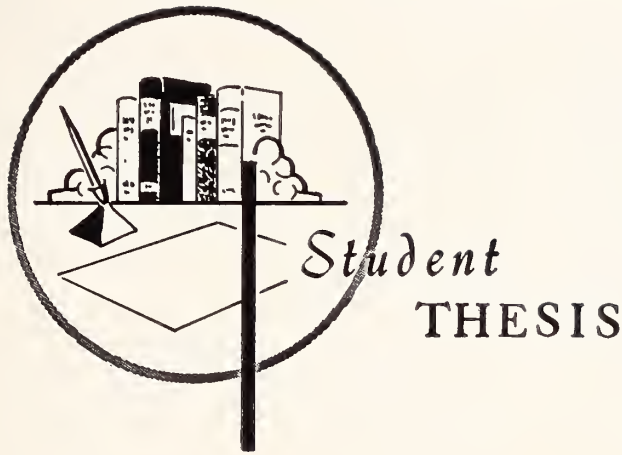
### Addendum

On the eleventh hospital day the patient was returned to the operating room where further debridement and skin grafting of the left shoulder was performed. On the eighteenth hospital day a rotation chest wall flap was performed because of the tissue slough in the right axillary area which had exposed the axillary artery and vein. Skin grafting of the right arm was performed on the thirtieth hospital day, and the patient was discharged from the hospital 48 days after admission with all wound areas covered with skin and healing well.

### References

1. Gravas, H.; Brown, J. J.; Lever, A. F.; Macadam, R. F. and Robertson, J. I. S.: Acute renal failure, tubular necrosis and myocardial infarction induced in the rabbit by intravenous angiotensin II. *Lancet* II (7714):19, 1971.
2. Hartford, C. E. and Ziffren, S. E.: Electrical injury. *J. Trauma* II (4):331-336, 1971.
3. Hollenberg, N. K.; Adams, D. F.; Oken, D. E.; Abrams, H. L. and Merrill, J. P.: Acute renal failure due to nephrotoxins. *New Eng. J. Med.* 282:1329, 1970.
4. Hollenberg, N. K.; Epstein, M.; Rosen, S. M.; Basch, R. I.; Oken, D. E. and Merrill, J. P.: Acute oliguric renal failure in man: Evidence for preferential renal cortical ischemia. *Medicine* (Baltimore) 47:455, 1968.
5. Rosoff, C. B. and Walter, C. W.: The controlled laboratory production of hemoglobinuric nephrosis. *Ann. Surg.* 135:324, 1952.
6. Stahl, W. M. and Stone, A. M.: Prophylactic diuresis with ethacrynic acid for prevention of postoperative renal failure. *Ann. Surg.* 172:361, 1970.
7. Stone, A. M. and Stahl, W. M.: Effect of ethacrynic acid and furosemide on renal function in hypovolemia. *Ann. Surg.* 174:1, 1971.





## ***Multiple Myeloma: Malignant Dysgammaglobulinemia***

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"MULTIPLE MYELOMA is a malignant, non-matrix forming, round cell, bone marrow tumor."<sup>1</sup> This disease was initially characterized by softening and fractures of bones associated with a peculiar protein in the urine. It was described by Bence-Jones and others as early as 1845. In 1900, Wright drew attention to the similarity that existed between plasma cells and the cells which made up the bulk of the tumors. In 1928, Perizweigh reported that the bone lesions of multiple myeloma were usually associated with hyperproteinemia and in 1939, Longsworth described the tall, narrow electrophoretic peak we now call the M-spike.<sup>2</sup> Recently our concept of multiple myeloma has, as a result of continually expanding amount of information, evolved from one of a discrete disease entity to one in which multiple myeloma is seen as one of several disorders which involve abnormal synthesis of the immunoglobulins and are corporately referred to as the plasma cell dyscrasias. Osserman says, "The term Plasma Cell Dyscrasia is employed generally to encompass the wide range of pathologic conditions and biochemical abnormalities considered to represent unbalanced proliferative disorders of the cells that normally synthesize immunoglobulins. The extent of proliferative abnormality in the various plasma cell dyscrasias ranges from apparently autonomous, malignant proliferation in typical multiple myeloma to apparently benign and stable dyscrasias manifested by their associated gamma globulin abnormalities. The plasma cell dyscrasias are

characterized by: (a) the proliferation of plasma cells in the absence of identifiable antigenic stimulus, (b) elaboration of electrophoretically and structurally homogeneous 'M-type' gamma globulins or excessive quantities of comparably homogeneous polypeptide subunits of these proteins, i.e., Bence-Jones proteins, H-chains, etc., and (c) commonly, an associated deficiency in the synthesis of normal immunoglobulins." To make the diagnosis of plasma cell dyscrasia and also to determine the likelihood of malignancy, we rely primarily on three methods of obtaining data: (1) presence of paraproteins—98 per cent of the patients in one series with 223 patients with proven malignancy associated with immunoglobulin production had abnormal paraproteins in the serum or in the urine; (2) biopsy—92 per cent of the patients in the same series had positive biopsy either of the bone marrow or of a tumor; (3) radiology—87 per cent of the patients in whom the diagnosis of malignant plasma cell dyscrasia or paraproteinosis was confirmed had positive radiological exams.<sup>3</sup> Multiple myeloma, along with Waldenstrom's macroglobulinemia, Bence-Jones proteinemia, and Heavy Chain (Franklin's) disease, is one of the malignant plasma cell dyscrasias.

The purpose of this paper is to present a brief review of the literature on multiple myeloma and to correlate this information with the roentgenologic findings observed in a group of patients whose diagnosis was confirmed either by bone marrow aspiration, tumor biopsy or autopsy. The charts and x-rays were reviewed on all the proven cases of multiple myeloma which were followed at the Menorah Medical Center, Kansas City, Missouri, 1965 through 1969 inclusively.

\* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. Nash recently completed his internship at University of Kentucky.

## Etiology

The etiology for plasma cell dyscrasias in general and for multiple myeloma specifically remain unknown. Several interesting facts, however, are currently being investigated. Some tumors have been observed in animals which have great similarity to the plasma cell dyscrasias in man. The Aleutian strain of mink are frequently observed to have a disease referred to, oddly enough, as the Aleutian mink disease which causes (1) hypergammaglobulinemia (a homogeneous, 7S gamma globulin), (2) diffuse periarteritis, (3) marked plasma cell proliferation throughout the reticuloendothelial system. This disease, according to Osserman,<sup>4</sup> has been shown to be caused by a virus. Also, it has been noted that there is a high incidence of intracellular "viral-like" particles demonstrable in those inbred species of mice which are prone to develop spontaneous plasma cell dyscrasias. Naturally, the recent association of mononucleosis and Burkitt's lymphoma with viral etiologies lends credence to this theory and demonstrates the possible human application of these studies.

Investigators continue to study certain groups of mice which seem to have a genetic predisposition to develop a disease not dissimilar to multiple myeloma. The C<sub>3</sub>H strain of mice has a high incidence of spontaneous plasma cell dyscrasias. Other strains (e.g. BALB/c) also develop similar diseases but only when "induced" with some type of activator, either chemical or physical. This type of information obligates us to be alert to patterns in human disease which would imply induction or genetic transmission. Other investigators have found what they consider to be chromosomal abnormalities in patients with multiple myeloma.<sup>5, 6</sup>

## Epidemiology

Multiple myeloma is not as rare as people once thought and, thanks to increasingly sensitive means of detection, it is being discovered earlier and missed less frequently. The relative incidence is very similar to that of Hodgkin's disease.<sup>4</sup> The incidence of multiple myeloma is from 0.01 to 0.02 per cent of the population.<sup>7</sup> When in one study, 6,995 consecutive patients were subjected to serum electrophoresis, the incidence of monoclonal gammopathy was 0.9 per cent or four and one-half to nine times as great as the incidence of confirmed multiple myeloma in the same study. One must remember that other conditions (e.g. lymphoma) as well as preclinical multiple myeloma may cause this globulin abnormality. The peak incidence is between 50 and 60 years of age, and there seems to be a slight male preponderance. The disease has been observed to be uniformly fatal with the average life span after the first symptom being

two years and seven months.<sup>7-9</sup> The shortest survival after the first symptom was five months and the longest case reported by any of the authors cited in this paper was 16½ years. The average survival after diagnosis was one year and ten months.<sup>10</sup> When followed long enough, all cases of solitary plasmacytoma, no matter how benign they may have appeared initially, eventually became generalized with all the criteria of typical multiple myeloma.<sup>10, 11</sup>

## Source of Immunoglobulins

"The synthesis of specific proteins is the principal and probably the sole function of plasma cells."<sup>12</sup> It would appear, however, that these proteins can, in unusual situations, be produced by other cell types, e.g., lymphocytes and occasionally malignant epithelial cells. Plasma cells then produce immunoglobulins which migrate in the slow alpha through the gamma range. In physiologic situations, the immunoglobulins are very heterogeneous and changes in the serum concentration are reflected on the electrophoretic graph by a diffuse alteration in all, or at least several, of the immunoglobulins. In a monoclonal gammopathy such as multiple myeloma, the narrowness of the immunoglobulin spike implies an abnormally homogeneous electrochemical grouping of the proteins. This homogeneity can be explained by the concept of one clone of plasma cells undergoing malignant transformation and yet remaining sufficiently well-differentiated that they faithfully reproduce a specific, homogeneous immunoglobulin. It is interesting to note, however, that the classic, one clone-one protein theory may be somewhat inadequate to explain the heterogeneity that has been noted in some of the Bence-Jones proteins and gamma globulins. The use of starch gel electrophoresis has in recent years been used to demonstrate that the narrow, M-protein spikes observed on conventional electrophoresis can be divided into two to five smaller, discrete peaks. It can be shown, on the basis of molecular weight, that these discrete peaks are not due to the formation of polymers of differing weights (this tendency seems to be greatest in the gamma A proteins and the tendency seems to be related to the high content of carbohydrate<sup>4</sup>), but due to more subtle changes which are not associated with changes in the molecular weight or any detectable antigenic difference. Two possible explanations have been offered: (1) differences in configuration result in multiple electrochemical changes which could explain the multiplicity of the peaks, and (2) there could be small differences (e.g. 1 amino acid) in the primary structure which would give heterogeneous peaks. The first of these is compatible with the one clone-one protein theory but if number two is correct, the one clone-one protein theory would be un-



tenable and one would need to propose either a one clone-multiple proteins theory or a multiple clones-multiple proteins theory.<sup>4, 12</sup>

Our current concept is that there are five families of immunoglobulins and they are: (1) IGG—this group of immunoglobulins has an ultracentrifuge constant of 7S and a molecular weight of approximately 160,000. This group is responsible for approximately 75 per cent of the normal gamma globulins, and the incidence of the IGG M-proteins correlates very well with the incidence of IGG proteins in normal serum—roughly 70 per cent of all M-proteins are IGG. The normal serum content is 0.8 to 1.5 grams per 100 milliliters. The majority of the acquired antibacterial and antiviral antibodies are composed of IGG molecules. (2) IGA globulins differ from the IGG globulins in their high carbohydrate content. The high carbohydrate content is thought to be associated with the fact that these molecules tend to polymerize and form complexes with other serum proteins. They, too, have a sedimentation constant of 7S although their propensity to polymerize can result in heterogeneity on both the ultracentrifugation and on the electrophoretic pattern. They have a molecular weight of approximately 160,000. About 15 to 20 per cent of a normal person's globulin fraction is composed of IGA molecules (0.056 to 0.193 grams per 100 milliliters), and the IGA globulins are identified as the M-protein in 25 to 30 per cent of the plasma cell myelomas encountered. Many IGA antiviral and antibacterial antibodies have been discovered, and these globulins seem to have an especially high incidence in glandular and intestinal secretions. (3) IGM globulins were named for their high molecular weight which is approximately 1,000,000. They have a sedimentation constant of 19S and, like the IGA globulins, they have a high carbohydrate content, and they tend to polymerize. They compose approximately 5 per cent of the normal immunoglobulins which means that their serum concentration is approximately 0.039 to 0.117 grams per 100 milliliters. These globulins perform many important antibody functions. This is the group of antibodies which proliferates most rapidly after sensitization and they are, therefore, very important in the early humeral response.<sup>13</sup> Their importance and their concentration tend to decrease as the IGG globulins become more numerous. (4) IGD globulins have only recently been discovered, and to date their function remains unknown. They have a sedimentation constant of 6.76 to 7.04, and they comprise 1 to 3 per cent M-protein (approximately 0.003 gram per 100 milliliters). Ten cases have been reported to date in which the M-protein observed in a plasma cell myeloma was shown to be an IGD globulin.<sup>14</sup> But, we could predict that the actual incidence will cor-

relate well with the concentration of IGD globulins in normal serum or 1 to 3 per cent. (5) IGE globulins are the immunoglobulins which possess reagenic activity, and they seem to be involved most frequently in allergic disease. It is interesting to note that the relative concept of the individual immunoglobulins in normal states is well correlated with the incidence of each family of immunoglobulins in malignant disease. This would imply that although there are apparently different clones of plasma cells for the production of the different immunoglobulins, they are equally susceptible to undergo malignant transformation, and the difference in incidence of each family in malignant disease can be explained by the differences in cell mass initially.

One other protein is commonly observed in plasma cell myeloma, and it has been shown to be one of the component parts of the completed immunoglobulin molecules. Bence-Jones protein is essentially a light chain with a molecular weight of 22,000 and a sedimentation constant of 2.4 to 3.5. Bence-Jones protein is produced in small amounts in normal subjects (usually its main source is the kidney's destruction of gamma globulins) and careful analysis will reveal at least small amounts of Bence-Jones protein in most of the cases of plasma cell myeloma.<sup>15</sup> Statistics vary, but indicate that it is rare to have malignant plasma cells without an abnormal protein being present in either the serum or the urine.<sup>4, 9, 12, 16</sup> Table 1 shows the possible protein products and their relative incidence.

TABLE 1 <sup>16</sup>		
Incidence PER CENT	Chains Synthesized	Protein Produced
47 . . . .	L-Chains; H-Chains	M-protein plus a trace of B-J protein
30 . . . .	L-Chains; H-Chains	M-protein plus Bence-Jones protein
19 . . . .	L-Chains only	Bence-Jones protein
4 . . . .	None	None

Table 2 reveals the types of specific proteins which have been observed to date in plasma cell myeloma.

Extreme similarity exists between the M-proteins and the normal gamma globulins and antibodies. In fact, evidence is accumulating that the proteins are actually antibodies for which, in most instances, the antigen remains unknown. In occasional cases, the M-proteins have been shown to have specific demon-

TABLE 2<sup>4</sup>

	<i>L-Chains</i> (2)	<i>H-Chains</i> (2)
Bence-Jones		
Proteins . . . . .	Type I (Kappa) or Type II (Lambda)	—
IGG Globulins..	Type I or Type II +	H <sup>G</sup>
IGA Globulins..	Type I or Type II +	H <sup>A</sup>
IGD Globulins..	Type I or Type II +	H <sup>D</sup>

strable antibody activity—e.g., anti-streptolysin and anti-dinitrophenyl.<sup>16</sup> Thus far, every bit of evidence obtained from the study of M-proteins (which lend themselves quite easily to study due to their large, homogeneous volume) has been directly applicable to the normal gamma globulins.<sup>15</sup> The only real protein defect discovered to date is the asynchronous synthesis of the constituent polypeptide chains normally used to form gamma globulins.<sup>16</sup> Only in a very few instances has an increased synthesis of heavy chains been observed (H-Chains or Franklin's disease), but a disproportionate synthesis of L-Chains is almost the rule in plasma cell myeloma. Eighty per cent of the patients with M-proteins also have a relative decrease in the serum concentration of the normal gamma globulins.<sup>9</sup>

Symptomatology

Pain, tumors, pathologic fractures, hypercalcemia with hypercalciuria, anemia, neurological symptoms and predisposition to bacterial infections are the most common clinical aspects of this disease.<sup>4, 17</sup>

It would naturally be somewhat categorical to say that the most common symptom is pain, yet this has been asserted by some investigators, and it does seem to have good support.<sup>10, 12</sup>

Wintrobe didn't include anemia in his list of most frequent findings, but it was the most consistently observed phenomenon in the series being presented in this paper, and other authors included it in their list of common findings.

It is well known that the symptomatic period of plasma cell myeloma is preceded by a long (up to 20 years) asymptomatic period during which the disease may be detected only if one electively evaluates the serum or the urine proteins, or if the patient has many bacterial infections, thereby alerting the physician to the patient's relative immune incompetence.

Pain is commonly wandering and intermittent and is most commonly referred to the back. Pain with radiation down the legs is occasionally seen, associated with compression fracture. Pathologic fracture was the first symptom in 6 per cent of the patients in one series of 60 patients. The location of the presenting

pathologic fracture was as follows: (1) lumbar spine—27 per cent; (2) lower extremity—27 per cent; (3) skull—11.7 per cent; (4) thoracic spine—10 per cent; (5) upper extremity—10 per cent; (6) ribs—8.3 per cent and (7) clavicle—8.3 per cent.<sup>10</sup> Naturally, the number of pathologic fractures increased as the disease progressed and eventually 75 per cent of the patients had compression fractures of the spine.<sup>18</sup>

Estimates vary as to the incidence of bony change of sufficient amplitude to result in positive radiological studies. Many investigators, however, would predict that in 85 to 92 per cent of the cases, radiologic criteria suggesting the diagnosis would be present.<sup>3, 18</sup> That the bone is frequently involved as a plasma cell tumor proliferate is not surprising. Some investigators feel that the relationship between the tumor and the bones is so intimate that the tumor growth can be monitored by measuring the amount of calcium lost in the urine once the patient is stabilized on a constant daily calcium intake.<sup>10</sup>

Since most of this tumor mass is intramedullary, it is interesting that it has been shown in mice that there is a linear relationship between the amount of tumor mass and the amount of paraprotein or globulin produced. Several investigators have concluded that in humans with malignant plasma cell myeloma, the total amount of tumor mass is proportional to the amount of M-protein.<sup>3</sup> It would seem logical then that one could create a situation in which the patient ingested a known amount of calcium (e.g. 200 milligrams) each day and daily 24 hour quantitative urines were calculated. If chemotherapy were initiated under these circumstances, the variations in the urinary calcium should reflect the therapy induced variations in the tumor mass.

As the tumor enlarges and more and more bone is destroyed, the patient often develops hypercalcemia after the critical level of renal excretion has been reached. Hypercalciuria is a natural sequel of the hypercalcemia.<sup>8</sup> The increased amounts of calcium in the urine act as an osmotic diuretic; however, most patients, if adequately hydrated, are capable of compensating for this diuresis. Occasionally, the hypercalciuria is associated with poor hydration or impaired tubular function, in which case dehydration, oliguria and azotemia complicate the patient's already precarious existence. This process is heralded by symptoms primarily related to the hypercalcemia: anorexia, nausea, constipation, increased myocardial irritability, confusion, etc.

Anemia is common and the papers reviewed stated from 49 per cent to virtually 100 per cent of the patients with plasma cell myeloma could be demonstrated to have a subnormal hemoglobin. Multiple factors are involved in the development of this anemia



and include: decreased marrow space available for hematopoiesis secondary to the mass of the intramedullary tumor, a decreased red cell survival time which may be due to M-type antibodies attached to the red cell itself, thrombocytopenia and gastrointestinal bleeding.<sup>9</sup>

As previously mentioned, these patients are immunologically incompetent and, therefore, they do have frequent and often fatal infections. The amount of normal gamma globulin in these patients is almost universally reduced,<sup>3</sup> and the antibody response that they do have when exposed to specific antigens has been shown to be abnormal.<sup>2, 9</sup> The patient is often rendered even more susceptible to infection (even by some organisms of relatively low virulence and pathogenicity) by the chemotherapeutic agents administered to him by his physician.

### Protein Abnormalities

"Clinically the protein abnormality in multiple myeloma may take one or all of three forms: (1) hyperproteinemia, (2) the excretion in the urine of a protein with characteristic physical properties and (3) a peculiar protein deposition in the tissues, paramyloidosis."<sup>2</sup>

Not all patients with plasma cell myeloma have hyperproteinemia; in fact, 10 to 25 per cent of the patients with a confirmed diagnosis of plasma cell myeloma fail to show on M-spike on the serum electrophoresis.<sup>19</sup> The majority, however, have elevated protein levels, usually of the gamma fraction (average of 4.3 grams of gamma globulin per 100 milliliters at time of detection).<sup>3</sup> Wintrobe says that the hyperproteinemia may be of an extreme degree with values approaching 20 grams. Naturally, the physicochemical properties of the molecules will vary with their structure and composition, and two of the possible problems which can be attributed to their physicochemical composition are coagulation defects secondary to interaction between the globulins and the specific coagulation factors, and circulation impairment as a result of increased humeral viscosity due to the high concentration of viscous globulins. The amount of protein in the serum has been correlated with the likelihood of malignancy, and it has been found that as the protein volume (M-spike) increases so does the incidence of malignancy as the underlying etiology. A 12-month doubling time of any homogeneous protein fraction has also been suggested as an indicator of malignant disease.<sup>14</sup>

In renal disease, the major protein in the urine is albumin, but in plasma cell myeloma, Bence-Jones protein is the major protein. Apparently, the Bence-Jones protein in the urine represents the dyssynchronous synthesis of light and heavy chains by the malignant plasma cells. Thus, the Bence-Jones protein

of plasma cell myeloma is from a different source than that which is seen in small amounts in normal patients which is due to renal breakdown of gamma globulins.<sup>15</sup>

Interest in Bence-Jones proteinuria is currently high in respect to the possible detrimental affects of intravenous pyelography (IVP) in a patient with plasma cell myeloma. In 1964, Brown and Battle reviewed 39 cases in which IVP dye had been administered to myeloma patients, and they found four whose renal status they thought was damaged by the procedure. The four cases they presented have been criticized by other investigators on the grounds that Brown and Battle failed to demonstrate a meaningful cause and effect relationship between the pyelogram and the renal failure.<sup>8</sup> In one series of 123 patients with plasma cell myeloma who were subjected to IVP's, not one instance of acute renal failure was observed. One thing that was agreed upon by virtually every investigator was that the dehydration which may be associated with an IVP could by itself cause decreased renal function and an elevated BUN.<sup>8, 9, 20</sup> A mucoprotein referred to as the Tamm-Horsfall protein is produced in the epithelial cells which compose the renal tubular walls and is found in quantities up to 50 milligrams per liter of urine from normal patients. Under certain circumstances, this protein has been shown to form a viscid gel with resultant tubular blockage. Conditions which seem to be prerequisites for the precipitation of Tamm-Horsfall protein are dehydration, increased urinary protein concentration and increased urinary electrolyte concentration.<sup>20</sup> Any one or any combination of these conditions might, therefore, cause acute renal failure, and the patient who has Bence-Jones proteinuria would, as a consequence of this condition alone, be in a high risk group. In this type of patient, dehydration or the need to excrete a load of intravenous dye could sufficiently compromise his renal function so that he would have acute renal failure. It would seem, therefore, that intravenous pyelography should be avoided in patients with plasma cell myeloma except in those circumstances in which these studies are definitely needed and then the patient should be kept well hydrated at all times. The dye dose should be small and one should remember that Bence-Jones protein precipitates most easily in acid and, therefore, the urinary pH should be in the 6.5 to 7.5 range.<sup>8</sup> Even with IVP dye, it has long been known that there is positive association between Bence-Jones proteinuria and renal functional impairment. This damage has been attributed to the tubular precipitation of these proteins with resultant cast formation and tubular obstruction.

Osserman says that recent work also suggests that these proteins have the capacity to have direct (pro-

tein-to-protein) interaction with cytoplasmic constituents which are involved in tubular reabsorption, and thus cause specific defects in the tubular transport system.<sup>12</sup>

### Paramyloidosis

Wintrobe says 6 to 10 per cent of patients with plasma cell myeloma develop a form of amyloidosis and other authors estimate that the incidence is even higher in the 8 to 15 per cent range.<sup>11</sup> Paramyloidosis can occur in any patient who has a plasma cell dyscrasia, whether benign or malignant, so long as there is proliferation of cells and formation of excess protein. Paramyloidosis seems to be intimately related to excess light chain (Bence-Jones protein) production and some investigators think that the Bence-Jones proteins associated with cases of paramyloidosis may have a particular affinity to bind to certain tissue constituents such as tissue proteins or polysaccharides.<sup>4</sup> Paramyloidosis may be found in "the mesenchymal tissue of the gastrointestinal tract, subcutis, subendocardium and subendothelial areas of the blood vessels."<sup>2</sup>

During the five-year period, 1965 through 1969, 18 patients were seen at Menorah Medical Center who, subsequent to their clinical diagnosis of plasma cell myeloma, had their diagnosis confirmed by tumor aspiration or an autopsy or some combination of the above. This series, therefore, is too small to be precise; however, it is presented with the conviction that it is informative. The x-ray file of each patient was pulled and the films of all 18 patients were read by the same radiologist<sup>21</sup> at one sitting. The radiographs were graded with special attention being paid to the following characteristics: bone density, presence of lytic lesions, location and nature of lytic lesions and fracture, especially of the vertebral bodies.

Two of 18 patients, or 11 per cent, failed to have any detectable macroscopic radiographic abnormalities, and radiographic studies on two other patients revealed only stage I bony demineralization. These values correlate relatively well with other studies of the radiographic signs in plasma cell myeloma,<sup>18</sup> and they remind us that in a certain group of patients with plasma cell myeloma, radiographic evidence of their disease will be absent.

Each patient's films were evaluated to determine the bone density, not because generalized demineralization is diagnostic of plasma cell myeloma, but because it is good presumptive evidence. Other conditions one must consider when reading films with generalized demineralization of the bones include: senile and postmenopausal osteoporosis, hyperthyroidism, hyperparathyroidism and disuse.<sup>18</sup> The increased radiolucence in plasma cell myeloma is due to the dif-

fuse thinning of the trabeculae and to osseous demineralization due to the presence of the tumor in the marrow. That most, if not all, of the marrow is involved is illustrated by the high index of success obtained with bone marrow aspirations. Even though macroscopic bony lesions may not be present, bone marrow aspiration will usually yield a positive microscopic diagnosis.<sup>10</sup> The 18 patients in this series were graded as follows with reference to bone density:

GRADE OF DEMINERALIZATION			
<i>Grade of Demineralization</i>	<i>Description</i>	<i>Number of Patients Per Cent</i>	
0 . . . . .	Normal	4	22
I . . . . .	Mild	6	33
II . . . . .	Moderate	6	33
III . . . . .	Severe	2	11

Seventy-eight per cent of the patients, therefore, were observed to have some degree of decreased bone density.

In the classic descriptions of multiple myeloma, lytic lesions of the bones were usually described and the implication was that these lesions were common findings in this disease. Special attention was, therefore, given in this study to the detection of lytic lesions. The lytic lesions were classified in two groups: (1) classic, discrete, "punched out" lesions, and (2) mothly lesions with the appearance of metastatic carcinoma. The discrete "punched out" lesions tend to be observed most frequently in locations where the normal cortical bone tends to be relatively thin and where the amount of soft tissue which can be radiographically superimposed is small, thus making the calvarium a common place.<sup>10, 18</sup> Naturally, as these lesions expand and their numbers increase, they tend to coalesce and even the "punched out" lesions may eventually present a picture which is indistinct from metastatic carcinoma. A significant number of the bony lesions observed in patients with plasma cell myeloma are virtually indistinguishable from metastatic lesions. Occasionally one can differentiate a lesion which is metastatic to bone from a primary lesion on the basis of cortical expansion. Metastatic lesions tend to destroy the bone without causing expansion. Conversely, primary bone lesions tend to cause expansion more frequently. One study revealed 12 cases of bone expansion in 57 patients with multiple myeloma as compared with three cases of bone expansion in 57 patients with metastatic carcinoma from the breast and four cases of bone expansion in 57 patients with metastatic disease from a non-breast primary.<sup>22</sup> The distribution of lytic lesions among the eighteen patients in this series was as follows:



<i>Lytic Lesions</i>	<i>Number of Patients</i>	<i>Per Cent</i>
Absent .....	9	50
Present .....	9	50
"Punched out" .....	6	33
"Mothy" (metastatic appearance) .....	3	17
Expanded bone .....	2	11

Thus, it would appear that when the classic "punched out" lesions are detected they are virtually pathognomonic; however, many cases of plasma cell myeloma will never develop this characteristic lesion. The astute physician must, therefore, be mindful of the other bony abnormalities which can be attributed to this disease.

The location of the lytic lesions is another interesting bit of evidence which may be useful in determining the significance of the lesions. In 1958, Jackson and others found that in 70 of 74 cases of metastatic carcinoma, the vertebral pedicles were involved while only eight of the 54 patients with multiple myeloma demonstrated involvement of the pedicles. Another study in 1968 revealed preservation of the pedicles in 80 per cent of the cases of multiple myeloma while the pedicles were preserved in only 30 to 38 per cent of the cases of metastatic carcinoma. In this series, three or 17 per cent of the patients had destruction of the pedicles. Pedicle destruction occurs frequently in plasma cell myeloma although its incidence is less than that encountered in metastatic disease. Observation, therefore, of vertebral pedicles may yield information which is helpful in establishing diagnosis of plasma cell myeloma.

Involvement of the vertebral bodies with resultant compression fractures of one or more vertebrae was demonstrated in 11 of 18 patients or 61 per cent. This number is somewhat lower than that cited in the majority of studies; however, it is still high enough to impress us with the fact that this is one of the most common radiographic signs.

Many other parts of the skeleton may be involved, although in general, certain areas are referred to as cold areas (e.g. radius, ulna, tibia) and are usually spared. One patient in this series had macroscopic lesions which were obvious in the tibia, but in the so-called "hot" areas, the only manifestation of the disease was demineralization. The clavicle and scapula were observed with special interest in this series because of their relatively low incidence of involvement in metastatic disease. They were involved in 22 per

cent of the cases in this series, and although this incidence is not overwhelming, it does suggest that lytic involvement of the clavicle or scapula may be useful as a differential sign when attempting to differentiate metastatic carcinoma from plasma cell myeloma.

No radiographic evidence was obtained of osteoblastic activity.

## References

1. Meschan, Isadore: *Roentgen Signs in Clinical Practice*. Philadelphia, Saunders, 1966.
2. Wintrobe, M. M.: *Clinical Hematology*. Philadelphia, Lea and Febiger, 1967, p. 1182.
3. Hobbs, J. R.: Paraproteins, benign or malignant? *Brit. Med. J.* 3:699, 1967.
4. Osserman, Elliott and Takatsuki, Kiyoshi: Plasma cell myeloma: Gamma globulin synthesis and structure. *Medicine* 42:357, 1963.
5. Castoldi, Gian L., et al.: Chromosomal imbalance in plasmacytoma. *Lancet* 1:829, 1963.
6. Lewis, F. J. W., et al.: Chromosomal abnormalities in multiple myeloma. *Lancet* 1:1183, 1963.
7. Migliore, Philip J. and Alexanian, Raymond: Monoclonal gammopathy in human neoplasia. *Cancer* 21:1127, 1968.
8. Morgan, Cecil and Hammack, Wm. J.: Intravenous urography in multiple myeloma. *N. Eng. J. Med.* 275:77, 1966.
9. Alper, Chester A.; Rosen, Fred S. and Janeway, Charles A.: The gammaglobulins. *N. Eng. J. Med.* 275:591, 1966.
10. Gorji, Jawad and Francis, Kenneth C.: Multiple Myeloma. *Clin. Orthoped.* 38:106, 1965.
11. Pear, Bert Lincoln: The plasma cell in radiology. *Amer. J. Roentgen.* 102:908, 1968.
12. Osserman, Elliott F.: *Cecil and Loeb, Textbook of Medicine*. Philadelphia, Saunders, 1967, p. 1109.
13. Miller, Daniel G. and Korngold, Leonard: Monoclonal immunoglobulins in cancer. *Med. Clin. N. Amer.* 50:667, 1966.
14. Sleeper, Carol A. and Cawley, Leo P.: Detection and diagnosis of monoclonal gammopathy. *Amer. J. Clin. Path.* 51:395, 1969.
15. Sandor, Georges: *Serum Proteins in Health and Disease*. Baltimore, Williams and Wilkins, 1966.
16. Kunkel, Henry G.: The "abnormality" of myeloma proteins. *Cancer Res.* 28:1351, 1968.
17. Midwest Cooperative Chemotherapy Group: Multiple Myeloma. *J.A.M.A.* 188:741, 1964.
18. Heiser, Saul and Schwartzman, Joel J.: Variations in the roentgen appearance of the skeletal system in myeloma. *Radiology* 58:178, 1952.
19. Zawadzki, Z. A. and Edwards, George: M-components in immunoproliferative disorders. *Amer. J. Clin. Path.* 48:419, 1967.
20. Berdon, Walter, et al.: Tamm-Horsfall proteinuria. *Radiology* 92:714, 1969.
21. Dr. Sidney Rubin, Chief of Radiology, Menorah Hospital, Kansas City, Mo.
22. Jackson, David M.: Myeloma and carcinoma metastatic to bone. *Clin. Radiol.* 19:318, 1968.
23. Fahey, John L.: Antibodies and Immunoglobulins. *JAMA* 194:71, 1965.

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## *The President's Message*

### **"Future Medical Education in Kansas"**

The public press is carrying news that the Kansas Board of Regents have announced a major expansion of the K.U. Medical Center to Wichita State University and South Central Kansas as these lines are being written.

The benefits for Kansas medicine of such an expansion are numerous, including the education of additional physicians for our state, a long term goal of the Kansas Medical Society and of all Kansas physicians. We have an opportunity in the next decade, with the proposed increase of K.U. graduates from 144 to 200, to make an effort toward meeting the health needs of the state.

It must be borne in mind by members of the Society, however, that this expansion's actual development depends upon the state legislature adequately financing the effort. Legislators will consider this plan and the funding that will be needed in the 1972 session.

What can we do to help? Each member of this Society must use his or her best efforts towards convincing the legislators who represent him or her that such an expansion of K.U.M.C. to Wichita State University is a vital part of the health care system for this state.

In a special report entitled "Higher Education in the Nation's Health" issued in October of 1970, the Carnegie Commission on Higher Education identifies nine U. S. cities in which new university health science centers should be founded. The Wichita, Kansas, area is one of the nine. The new expansion of K.U.M.C. will have at least partially met the goal of the Foundation in our home state.

The Kansas Medical Society joins with the entire health community of this state in congratulating the Board of Regents on their foresight in this expansion which promises so much for the people of Kansas.



But much remains to be done by the Society in assisting in the legislative and financial development of the program.

We need the support of the entire Kansas Medical Society behind K.U.M.C. and the Vice Chancellor for Health Affairs, Dr. William Rieke. A unified medical community can bring this expansion to reality.

*Wm. J. Rieke, M.D.*

*President*





## Editorial COMMENT

### *Who Culpa?*

When man was picking out characteristics to distinguish himself from lower animals, the first he chose was the guilt complex. This proved truly distinguishing but soon proved to be a very tiresome trait so he used his newly-developed reasoning power to devise some form of relief from the steady diet of self-recrimination. The result was the scapegoat, a creature which has taken many and varied forms. None has been so universal and indestructible as the structure we pay homage to today, the bureaucracy. For some of the inexplicable malfunctions of life, there have been whimsical agents such as gremlins and things that go bump in the night, but for the daily vexations and frustrations, nothing has matched it—or its physiologic unit, the bureaucrat, for spleen-venting and sin-shrugging. That the bureaucracy has gone so long without receiving a vote of confidence and thanks should incite a fresh charge of guilt in itself, but perhaps it is not too late to put in a good word for it.

The durability of the bureaucracy derives from its humanness and at the same time its formlessness. It is the common link of all political systems, and the success or failure of each of these results not so much from the validity of the given philosophy or its service to mankind but whether the bureaucracy evolving will offer the rulers and the ruled the adequate release of their tensions. We fear the foreign isms and the foreigners fear our isms, and all the time the twain are meeting in the bureaus. And each of us is a bureaucrat in some context.

From the first day of school, children get the picture of Democracy in Action in the best calendar art tradition: clear-eyed, smiling citizens of every size, shape, shade, sex, and age (18 and over), trooping to the polls. The elected officials of noble visage and golden tongue convene in hallowed halls to propound wise and just laws to be administered by forthright and honorable agents under the benign and uncorrupted eyes of our leaders. Democracy in

action? Not a bit. Democracy in action is the deputy assistant at the third desk in the fourth row who is drawing up the rules and regulations to implement a law on bug control (to satisfy the farmers) pushed through the committee by the chairman in return for his colleague's vote on a bill for bug protection (to satisfy the ecologists.) It is the file clerk who went to school during the sight-reading era and files the law on bugs under "q" because they are cute. It is the committee studying governmental reorganization to eliminate the need for a committee to study bugs (previous committee reports being irrelevant or lost). Obviously, it is necessary to have some coordination of these efforts, so a bureau on bug management is set up and everyone is happy because there is now someone to blame (1) if the law works, (2) if the law doesn't work, or (3) nothing works.

The democracy of bureaucracy is evident in its service to leader and led alike. Some months ago, Daniel Moynihan in the *National Observer* described the way in which antagonistic bureaucrats can obstruct or embarrass the President by leaking information at inopportune times. About the same time, David Brinkley was telling a convention of elementary school principals that the people were disenchanted with their government because the sprawling, unfeeling, unresponsive establishment (read bureaucracy) led them to feel they no longer had any voice in things. (The principals didn't need to have David tell them—the kids already have.) So it seems as if there is only one thing functioning as it should today—the bureaucracy. There is some solace in knowing it is sitting there, shmoo-like, just waiting to be kicked.

Physicians, as a rule, are among the more vocal critics of the bureaucracy, seeing it as something apart from their perfectly reasonable and explicable activities. True, they have rules and regulations for running their offices, and if these seem to work against the interests of an individual patient, they are for the

common good. Hospitals are held together by by-laws, rules, and customs that accomplish only slightly greater permission than restriction. If the reason for some of the rules is a little obscure to the patient, it must be remembered that he is just another bureaucrat, temporarily displaced from his usual area of function.

In the bureaucracy, man meets the system. The bureaucrat is the Everyman of this complex world. The policies and innovations, the changes so clearly and wisely created at the committee, the board meeting, the legislative sessions are here translated into effect. If the effect is not what was anticipated, it is because the spirit and intent has been ground up in the bureaucratic processing. As a result, we may not have a better world, but we can more comfortably deny the responsibility for it.

If the behavioral scientists are to achieve their goal of making man a tranquil, loving creature, they must of necessity eliminate the *mea culpa*, a staggering concept but essentially self-defeating. The consternation we feel at the prospect of a controlled society with no problems of interrelationship is in reality our inability to imagine a system devoid of guilt and the inherent need to displace the blame to others. After all, this has been the most potent motivation we have known, the source of any real progress we have made.

But be of good cheer. There is no immediate prospect of such a change. Meantime, Bureaucracy is alive and well and living within us.—D.E.G.

## Along the Bookshelf

### Clendening Medical Library

#### RECENT ACQUISITIONS

- Alpiner, Jerome G. Speech and hearing disorders in children. Boston, Houghton Mifflin, 1970.
- American Academy of General Practice. Committee on Medical Economics. Organization and management of family practice; an advisory manual for the family physician in private practice. Kansas City, Missouri, 1970.
- American Medical Association. Department of Insurance and Practice Management. Peer review manual. Chicago, American Medical Association, 1971.
- American Social Health Association. Today's VD control problem—1971. New York, 1971.
- Atria Ramirez, Arturo. Endocrine function tests. Springfield, Illinois, Thomas, 1970.

- Becker, Bernard. Diagnosis and therapy of the glaucomas. St. Louis, Mosby, 1970.
- Cray, Ed. In failing health; the medical crisis and the A.M.A. Indianapolis, Bobbs-Merrill, 1970.
- Goldin, Marshall D. Intensive care of the surgical patient, with 42 contributors. Chicago, Year Book Medical Publishers, 1971.
- Green, Thomas H. Gynecology, essentials of clinical practice. Boston, Little, Brown, 1971.
- Grisez, Germain Gabriel. Abortion; the myths, the realities, and the arguments. New York, Corpus Books, 1970.
- Haagensen, Cushman Davis. Diseases of the breast. Philadelphia, Saunders, 1971.
- Kleid, Jack J. Handbook of medical emergencies; a guide for emergencies in internal medicine. Flushing, New York, Medical Examination Publishing Co., 1970.
- Nolen, William A. The making of a surgeon. New York, Random House, 1970.
- One life—one physician; an inquiry into the medical profession's performance in self-regulation. Washington, D. C., Public Affairs Press, 1971.
- Perkins, William H. Speech pathology; an applied behavioral science. St. Louis, Mosby, 1971.
- Roemer, Milton Irwin. Doctors in hospitals; medical staff organization and hospital performances. Baltimore, Johns Hopkins Press, 1971.
- Sanders, Derek A. Aural rehabilitation. Englewood Cliffs, New Jersey, Prentice-Hall, 1971.
- Stephen, Charles Ronald. Elements of pediatric anesthesia. Springfield, Illinois, Thomas, 1970.
- Symposium on Systems and Medical Care, Harvard University, 1968. Systems and medical care. Cambridge, Massachusetts, MIT Press, 1970.
- Symposium on Teamwork for World Health, Istanbul, 1970. Teamwork for world health; a Ciba Foundation symposium in honour of Professor S. Artunkal. London, Churchill, 1971.
- Wise, Francis H. Youth and drugs; prevention, detection and cure. New York, Association Press, 1971.

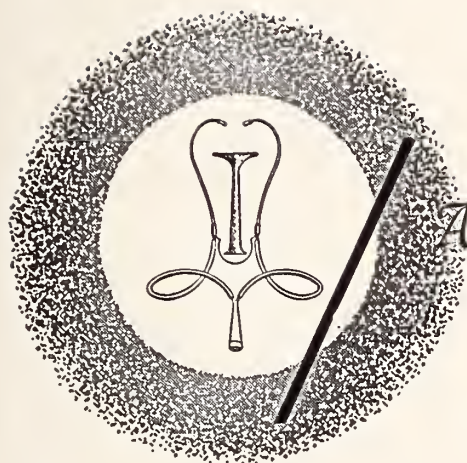
## NEW MEMBERS

*The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.*

Meade O. Davis, III,  
M.D.  
522 North Armour  
Wichita, Kansas

Wilbur J. McElroy, M.D.  
1616 West 8th Street  
Topeka, Kansas 66606





## Announcements

*Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. Notice of the session is posted in advance to allow the physician time to make preparations.*

### OCTOBER

Oct. 21-22 **Cardiopulmonary Resuscitation Training Course for Instructors**, sponsored by the Kansas Heart Association and the University of Kansas School of Medicine. For information, write the Department of Continuing Education, KUMC, 39th & Rainbow, Kansas City, Kansas 66103, or the Kansas Heart Association, 5229 West 7th St., Topeka 66606.

Oct. 28-30 49th annual fall clinical conference, Kansas City Southwest Clinical Society, Hotel Muehlebach, Kansas City, Missouri. For information write the Kansas City Southwest Clinical Society, 2220 Holmes St., Kansas City, Missouri 64108.

Oct. 23-29 Annual Otolaryngologic Assembly of 1971, University of Illinois Hospital Eye and Ear Infirmary. The Department of Otolaryngology, Abraham Lincoln School of Medicine, University of Illinois at the Medical Center, offers a condensed postgraduate basic and clinical program for the practicing otolaryngologist. For further information, write: Otolaryngology, P.O. Box 6998, Chicago, Illinois 60680.

Oct. 24-28 3rd annual Fall Scientific Assembly (37th Annual Meeting), American College of Chest Physicians, Sheraton Hotel, Philadelphia. Write: Alfred Soffer, M.D., American College of Chest Physicians, 112 E. Chestnut St., Chicago 60611.

Oct. 28-30 Course on *Antibiotics and Infection*, University of Iowa, University Hospitals,

Iowa City. For further information write: Ian MacLean Smith, M.D., University Hospitals, Department of Internal Medicine, Iowa City, Iowa 52240.

Oct. 31-Nov. 4 65th annual meeting, Southern Medical Association, Fontainebleau Hotel, Miami Beach.

### NOVEMBER

Nov. 1-3 *Clinical Reviews*, presented by the staff of the Mayo Clinic and the faculty of the Mayo Foundation, Mayo Civic Auditorium, Rochester. For information, write P. J. Osmundson, M.D., Chairman, Clinical Reviews Committee, Mayo Clinic, Rochester 55901. The program will be repeated on November 8-10.

Nov. 11-12 16th annual clinical conference, *Endocrine and Non-endocrine Hormone Producing Tumors*, Shamrock-Hilton Hotel, Houston. Sponsored by the University of Texas M. D. Anderson Hospital and Tumor Institute and the Division of Continuing Education of the Graduate School of Biomedical Sciences. For information, write: Mrs. Jane Brandenberger, Information Coordinator, The University of Texas M. D. Anderson Hospital and Tumor Institute, Texas Medical Center, Houston 77025.

Nov. 13 22nd annual Dr. F. G. Thompson, Sr. Lecture, Thompson, Brumm & Knepper Clinic building, 902 Edmond Street, St. Joseph, Missouri. Beginning at 4:00 p.m., the lecture will be given by U. S. Senator Stuart W. Symington, on the topic *Nuclear Impact on the Field of Medicine*.

Nov. 18 One-day seminar for physicians, *Newer Concepts in Acute and Chronic Pulmonary Diseases in Adults and Children*, Burton Auditorium, Wesley Medical Center, Wichita.

### POSTGRADUATE EDUCATION

University of Kansas:

Oct. 19-20 *Medicine and Religion: The Middle Years*

Oct. 21-22 *Cardiopulmonary Resuscitation Training Course for Instructors*

Nov. 8-11 *Internal Medicine*

Nov. 17-19 *Medical Technology*

Dec. 6-8 *Gynecology and Obstetrics*

For further information on the above courses write the Department of Postgraduate Medical Education, University of Kansas School of Medicine, Kansas City, Kansas 66103.

University of Missouri-Columbia School of Medicine:

Nov. 5-6 *M.D. Day* (Missouri-Oklahoma Faculty)

Nov. 8 *Management of Nursing Services*

Nov. 12-13 *Infectious Diseases*

Nov. 17-18 *Problems of the Eye: Intrinsic and Systemic Diseases*

For further information on the above courses, write the Conference Section, Continuing Medical Education, M-175 Medical Center, Columbia, Missouri 65201.

Nov. 1-3 39th annual Postgraduate Assembly, Omaha Mid-West Clinical Society, Hilton Hotel, Omaha, Nebraska. For information write Mrs. Mary E. Pilloud, Exec. Secretary, Omaha Mid-West Clinical Society, 1040 Medical Arts Building, Omaha 68102.

## Vox Dux

William J. Reals, M.D., President  
Kansas Medical Society

I wanted to congratulate you on your fine editorial in the Kansas Medical Society JOURNAL.\* As you probably know, I was one of the most vociferous, and loudmouthed supporters of removing mandatory membership in the AMA. It might be comforting for you to know that I do support the AMA and I have every intention of remaining a member for the indefinite future.

Also I wanted to commend you upon your stand which was reported in the *Beacon* (July 14, 1971) regarding the so-called natural health foods and the waste of money that people spend on them. I'm sure you agree with me that the great hazard is the claim that some of these merchants make, and the feeling that some people have that these are cures for disease and as a result a really serious condition may be allowed to progress to the point where it is fatal or at least extremely difficult to manage clinically. I think that most likely the paper took your remarks out of context in order to make them as conflictual as possible but I suppose that we must all learn to put up with this now and in the future.

Congratulations on your new position, I think it is well-deserved and I am sure your administration will

be most progressive and sensitive to the voice of the physicians who are in this state.

With kindest personal regards,

M. A. THROCKMORTON, M.D.  
Wichita

M. A. Throckmorton, M.D.  
Wichita, Kansas

Thank you very much for your most warm and kind letter of July 22, 1971. You are the only one to date who has taken the trouble to comment on the editorial concerning AMA membership.

I appreciate your comments and I also appreciate knowing that you will retain your AMA membership. Thank you also for your nice comments on the release on natural health foods and the other matters. There have been several letters to the editor against our position and also the "party line" on KFH has been hot with denunciations of our stand.

Throughout the remainder of my term I hope to respond to the needs and wishes of the membership of the Kansas Medical Society. If we stand together as physicians I feel that we can do a great deal to offset the attacks of all who seek to destroy not only the unity of doctors but also our free enterprise system.

Again, I deeply appreciate your kindness in writing. With very best personal regards and warm good wishes.

WILLIAM J. REALS, M.D.  
President, KMS

\* See the President's Message, July 1971.



# Medical-Legal Page

## Honest Misdiagnosis Held Not To Be Malpractice

A physician who made a diagnosis of tonsilitis for a condition that later turned out to be appendicitis was not negligent, the Supreme Court of Iowa ruled. The symptoms and x-ray findings were consistent with various illnesses, including tonsilitis.

A five-year-old child had vomiting and stomach-ache, with pain in the lower right side of her abdomen and a temperature of 101 F. Her mother called a physician who had not previously seen the child and told him her daughter had appendicitis. When she brought the child to the hospital the physician examined her, took x-rays, and made a diagnosis of tonsilitis. He gave the parents medicine for the child and sent her home.

On the seventh day of her illness, the child was still complaining of stomach pain, and she was admitted to the hospital. After a blood test and x-rays, surgery was performed, disclosing a ruptured appendix and peritonitis. Tubes were inserted to drain the infection, and about two months later the appendix was removed. After about a month, the mother took the child to the physician for treatment of a penicillin reaction and a bowel obstruction.

The child's father brought action for malpractice against the physician, the partnership with which he was associated, and the hospital. The trial court directed a verdict for the physician and the other parties, and the father appealed.

At the trial, a physician who had seen the child for about ten minutes on her first hospital visit testified that he had examined the child's stomach but had not found sufficient signs for a diagnosis of appendicitis. He had not gotten a good look at her tonsils but had noticed that the roof of her mouth was red. He said her white blood cell count of 5,000 was lower than usual, consistent with tonsilitis, rather than the 12,500 to 18,000 often seen in appendicitis. He had agreed with the other physician that she probably had tonsilitis.

The radiologist who took the x-rays had reported to the physician his impression that there was localized reflex ileus, or stoppage of the bowel, secondary to appendicitis. He testified as to the difference between an impression and a diagnosis, saying that a diagnosis meant that all things fitted together, while an impression meant something that it could be. He stated that many other conditions besides ap-

pendicitis could be consistent with reflex ileus, including tonsilitis.

A physician does not insure the correctness of his diagnosis, the high court said. A patient is entitled to a thorough examination, conducted with such diligence and methods of diagnosis as are practiced by physicians of ordinary skill and learning under like circumstances and in like localities. Evidence of the skill and care exercised must be given by experts, the court pointed out, unless lack of care is so obvious as to be within a layman's common knowledge. In the present case, laymen could not conceive of the complex nature of the diagnostic problem.

The radiologist's impressions of the x-rays supplied the expert testimony necessary for a jury question as to failure to properly interpret the x-rays and to communicate to the parents the possibility of appendicitis. The physician's diagnosis of tonsilitis was based on a physical examination and blood tests as well as on the x-rays.

There was no evidence to support the allegation of incorrect interpretation to the x-rays, the court held. The physician had no duty to advise the parents that the condition seen on the x-rays was also consistent with appendicitis.

Further, the physician and the radiologist were independent contractors, not hospital employees, and the hospital was not required to inform the patient of the radiologist's impression. The radiologist's reports were made to the physician, who was responsible to the parents concerning the proper handling of the case.—*Sinkey v. Surgical Associates*, 186 N.W.2d 658 (IowaSup.Ct., May 5, 1971)

## Orthopedic Surgeon Held Negligent In Treating Early Cancer

A patient who suffered cancer which metastasized to the lymphatic chain and the bloodstream was awarded \$85,000 by a California jury against a physician who diagnosed his condition as benign and continued treating it as such, even though he was aware of the possibility of cancer.

After wrestling practice, the patient, a 17-year-old student, noticed a 2-inch lump on his upper right arm. A general practitioner diagnosed the condition as a ruptured muscle and an organized blood clot and saw him periodically from February 6 to June 28, 1968.

When the lump had not subsided by June 28, the general practitioner referred the boy to an orthopedic surgeon, who operated on July 23. The hospital pathologist consulted seven other pathologists, five of whom believed the condition was benign nodu-

(Continued on page 430)

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KANSAS STATE DEPARTMENT OF HEALTH  
TOPEKA, KANSAS

Epidemiology & Disease Control Services—Registration & Health Statistics Services—Kansas Morbidity Incidence  
Summary of Cases Reported in July, 1971 and 1970

<i>Diseases</i>	<i>July</i>			<i>January-July Inclusive</i>		
	1971	1970	<i>5-Year Median 1967-1971</i>	1971	1970	<i>5-Year Median 1967-1971</i>
Amebiasis . . . . .	2	2	2	16	12	11
Aseptic meningitis . . . . .	7	4	4	7	8	7
Brucellosis . . . . .	—	—	—	1	1	1
Diphtheria . . . . .	—	—	—	—	—	—
Encephalitis, prim., infect. . . . .	—	3	2	7	10	5
Encephalitis, post-infect. . . . .	—	—	1	5	—	2
Gonorrhea . . . . .	546	552	546	3,973	3,797	2,874
Hepatitis, infectious . . . . .	62	36	36	407	293	242
Measles (Rubeola) . . . . .	35	1	*	1,385	68	*
Meningococcal meningitis . . . . .	—	2	1	24	5	14
Mumps . . . . .	6	—	*	770	139	*
Pertussis . . . . .	2	—	2	8	—	3
Poliomyelitis . . . . .	—	—	—	—	—	—
Rheumatic fever . . . . .	—	—	—	1	4	3
Rubella (German Measles) . . . . .	13	—	*	610	51	*
Salmonellosis . . . . .	184	33	33	347	117	121
Scarlet fever . . . . .	2	1	1	44	70	44
Shigellosis . . . . .	46	15	11	652	47	44
Streptococcal infections . . . . .	203	616	95	2,887	2,927	1,703
Syphilis . . . . .	112	120	112	832	789	789
Tinea capitis . . . . .	—	4	4	11	20	30
Tuberculosis . . . . .	14	15	17	93	125	125
Tularemia . . . . .	2	1	1	2	1	2
Typhoid fever . . . . .	—	—	—	—	—	—

\* Statistics not available for 5-year median.

RECOMMENDATION OF THE PUBLIC  
HEALTH SERVICE ADVISORY  
COMMITTEE ON IMMUNIZATION  
PRACTICES

COMBINATION LIVE VIRUS VACCINES

*Measles and Rubella*  
*Measles, Mumps and Rubella*

The Committee notes the recent licensure of two vaccines combining already available strains of live, attenuated viruses. The newly licensed combinations of measles and rubella vaccine\* and of measles, mumps, and rubella vaccine† extend the range of products available for routine immunization.

Data indicate that antibody response to each com-

ponent of these combination vaccines is comparable with antibody response to the individual vaccines given separately. There is no evidence that adverse reactions to the combined products occur more frequently or are more severe than known reactions to the individual vaccines. The obvious conveniences of giving already selected antigens in combined form should encourage consideration of using these products when appropriate.

Current recommendations on the use of live, attenuated virus vaccines state that whenever possible, the antigens should be administered separately, approximately one month apart. This is to obviate all the theoretical risks attached to their combined use, acknowledging the limited amount of relevant scientific evidence to eliminate such questions.

Now that specific combined preparations have been carefully evaluated in field studies and subsequently

(Continued on page 430)

\* Official name: Measles and Rubella Virus Vaccine, Live.  
† Official name: Measles, Mumps and Rubella Virus Vaccine, Live.



# The Month in Washington

President Nixon's sweeping economic proposals have pushed aside chances for Congressional hearings on national health insurance until after the first of the year. Four of the Nixon economic proposals require legislative action and this will keep the House Ways and Means Committee busy at least through September and probably longer. Coupled with the Congress' announced intention on adjourning in late October or early November, this could delay congressional action on national health insurance until late 1972, or possibly until the convening of a new Congress in 1973.

While the House Ways and Means Committee considers the Nixon economic proposals the Senate Finance Committee will consider the Social Security Amendments (H.R. 1) already passed by the House. Chances are that the Senate will delete the Administration's welfare proposals (Family Assistance Plan) from H.R. 1 and add Senator Wallace F. Bennett's (R.-Utah) Professional Standards Review Organization proposal of last year. Enactment of this legislation prior to adjournment is considered likely.

Also considered likely to be enacted prior to adjournment are the health manpower bills presently in conference. This legislation would authorize an estimated \$3.3 billion in aid to health profession students and their schools in the next three years and provide facilities and programs to close the manpower shortages in the health professions within seven years.

\* \* \*

The President of the American Medical Association, Wesley W. Hall, M.D., recently praised the nation's press for a "growing sophistication" in dealing with health care issues.

Speaking before an audience of newsmen, federal officials, and health organization representatives at the National Press Club, Washington, D. C., Dr. Hall said "This is a most healthy development." Many news stories now analyze the issues raised and challenge and dispute assumptions rather than follow a "hackneyed theme," he said.

"If the people are fully informed, we doctors of America will put our trust in their ability to make the right decisions . . . I find it encouraging that the press is approaching this subject with maturity, with skepticism and, most of all, with an open mind."

Noting that the AMA's Medcredit bill has attracted over 150 sponsors, Dr. Hall said this doesn't mean that Medcredit is going to be enacted but does "mean that a substantial number of congressmen and senators agree with the principles that we used in

drawing up a program and offering it to Congress."

Dr. Hall said Medcredit makes available to everyone under 65 a private program of complete medical and health care protection, covering both the ordinary and the catastrophic expenses of illness or accident.

"The protection can be a health insurance policy, membership in a prepayment plan or membership in a prepaid group practice. Each patient is left free to choose the kind of care he wants, and each physician is left free to practice as he wishes—alone or with other physicians."

The most important thing about Medcredit, said the AMA official, is that it maintains freedom for the patient as well as for the physicians.

"We believe that there is a lot of good in the present system. Two million Americans a day see their doctor, and although this probably is not all who should see a doctor, there is no reason to throw out the system that has this capacity. Rather we should build on it."

\* \* \*

The AMA's often expressed desire to see the establishment of a separate Department of Health with cabinet status has again been brought to the public's attention with the announcement of Congressman Paul G. Rogers (D.-Fla.), chairman of the House's subcommittee on health, that he will shortly introduce such a measure.

The issue seems to turn on the intertwined questions of which committees in Congress have the job of enacting and overseeing a national program and how the federal government will administer it.

During the past ten years or so health has mushroomed as an economic force in American life, and as a function of government. Neither Congress nor the executive branch has been able to keep pace organizationally with the changes.

Congressman Rogers' call for a separate health department is considered to be part and parcel of this behind-the-scenes jockeying by the Congress for more authority in health care matters. If a Department of Health was established, Rogers' subcommittee could claim authority over all of the activities of the new department and drive to establish a permanent full committee on health.

However, Rogers' proposal runs head-on against current thinking in the administration where policy has jelled in support of the current tri-function HEW apparatus. The trend of administration thought is that fewer departments make for more efficiency and coordination, less bureaucracy.

For the most part, these costs represent "transferred" spending from the private sector to the federal sector. In the case of Medigap, financed largely by tax credits for purchase of comprehensive private insurance, most of the "cost" represents a revenue loss rather than an additional expense.

The HEW report said overall federal spending under the Kennedy bill, including existing programs it would take over, would total \$81.6 billion in the fiscal year 1974, but that the proposed financing would raise only \$57 billion. Thus, it would be underfinanced by 43 per cent, or \$24.6 billion.

National health expenditures of all kinds will rise to \$105.4 billion in fiscal 1974, an average increase of 12 per cent a year, if none of the major proposals is enacted. Operation of the Kennedy program in fiscal 1974 would result in total U. S. health spending (government and private) of \$113.8 billion; the administration bill, \$107.2 billion; the insurance industry bill, \$110 billion; and Medigap, \$109.5 billion.

A comprehensive actuarial study of all of the major proposals for national health insurance arrangements prepared by HEW has been released for the information of congressional committees studying the issue.

The actuarial report's prediction of gross underfinancing in the Kennedy proposal for federal assumption of the bulk of health care costs was the most noteworthy item in the 83-page report. The work was reviewed by outside experts to check on its fairness and soundness.

The major plans before Congress would compare in terms of additional costs to the government as follows:

- Administration—\$2.6 billion
- Kennedy—\$59.4 billion
- Medigap (backed by the AMA)—\$6.3 billion
- Burleson (the health insurance industry plan)—\$7.3 billion
- Javits (medicare for all)—\$41.6 billion
- Hall-Long (catastrophic only)—\$3.2 billion; \$3.1 billion
- Pell-Mondale (mandated employer plans, health care corporations)—\$4.9 billion

### Medical-Legal

(Continued from page 427)

lar fasciitis and two that it was malignant fibrosarcoma. The hospital pathologist diagnosed the condition as benign but advised the surgeon of the difference of opinion.

The general practitioner and the orthopedic surgeon saw the boy periodically from July, 1968, to February, 1969. In December, 1969, the lump returned. When it was removed by the orthopedic surgeon on February 5, 1970, the tissue was found to be

malignant. The surgeon believed at that time that the cancer had metastasized to the lymphatic chain and the blood stream.

The patient was transferred to another physician, who administered chemotherapy for about a year and a half. At the time of the trial the boy had lost about 50 pounds, had suffered liver damage, and had seizures and convulsions. His prognosis was very poor.

The boy's guardian at law brought action for malpractice against the general practitioner, the orthopedic surgeon, and another physician. He contended that when the surgeon was advised of the pathologists' difference of opinion he should have operated and performed a local, wide excision to remove the surrounding tissue and attempt to prevent later metastasis if the tissue proved to be cancerous. After the first operation, the physicians should have consulted with an expert on soft tissue tumors, the guardian contended. He charged that the general practitioner was negligent in waiting to refer the boy to a surgeon.

The physicians denied all allegations, contending that they had acted according to the standard procedure. The jury brought in a verdict against the orthopedic surgeon only. The surgeon was granted a motion for a new trial.—*Westlund v. Snyder* (Cal. Super Ct., Fresno Co., Docket No. 142981, 1971)

### Morbidity Incidence Report

(Continued from page 428)

licensed for general use, the restriction on giving these particular antigens simultaneously is no longer relevant. *Accordingly, as an alternative to using combination vaccines, two or all three individual vaccines containing the same virus strains available in combined form (further attenuated measles, rubella, mumps) may be given by separate injections on the same occasion. Previously stated recommendations on other live virus antigens, however, still apply.* (April, 1971)

**Letters to VOX DOX should be addressed to the Vox Dox Editor, Journal of the Kansas Medical Society, 1300 Topeka Avenue, Topeka, Kansas 66612.**



# Woman's Auxiliary

## *Annie Gets a Gadabout Reputation in Summer*

The more Annie gets about, visiting cities on the various coasts . . . New York, San Francisco, Houston, Tampa . . . or the innercontinental cities such as Chicago, Dallas, Kansas City or Oklahoma City, the more she is convinced that most of Kansas has something very few other places have . . . fresh air. It might be filled with ragweed, elm pollen or wheat dust, but it's fresh air.

Perhaps that's the reason that Kansas auxiliaries haven't particularly gone into the environmental health issues being stressed so widely elsewhere. While we feel that environmental health is important, it is only one part of the many health education activities sponsored by the national auxiliary. Since it isn't the problem here that it seems to be in other areas, we aren't stressing it particularly at this moment, other than trying to do some of the things any housewife can do.

Annie was busy raking leaves and weeding her garden, piling the results on her ecological compost pile, when her radio started playing a tune about "those lazy, hazy, crazy days of summer." Hazy and crazy, maybe, but lazy . . . never! If summer is supposed to be lazy, Annie is beginning to have second thoughts about what a busy winter might mean! Fact is, summer was so busy with flitting here and there that her family was about to answer the telephone or doorbell with another song. That's right, it was "Annie Doesn't Live Here Anymore."

While Annie might have found her summer was crowded, for the most part auxiliary activities slow down following spring convention and don't resume until fall board meeting in September or October. So maybe this would be a good time to bring you a short summary of the 1970-71 state auxiliary activities as a whole.

To name a few of the more widely used programs, we'll start with drug abuse. The Kansas Medical Society had asked the auxiliary to work on this area last year, so 12 programs were presented by auxil-

aries over the state. AMA-ERF did well too. Of the \$17,409.79 presented to this fund by Kansas, \$9,043.75 was contributed by auxiliary members. In addition we're told that loans totaling \$226,650 have been made to 211 medical students, residents or interns since 1962. There are also 48 county auxiliary loans and three scholarships offered to paramedical fields that total \$35,031. There is a good possibility that a mobile unit for health education will be serving Kansas in the near future, and that auxiliary members may act as hostesses.

During the past year one auxiliary helped to raise \$800 for a radio program called "The Generation Gap." Parents and youths discussed pertinent problems. The International Health Activities committee shipped 45,245 pounds of supplies to Project Concern, World Medical Relief and Direct Relief Foundation. In addition the IHA state chairman gave 75 talks across the state to stimulate involvement. Out west 200 hygiene kits were given to the school for migrant workers' children. In the political area, each of the five congressional districts now has an auxiliary member serving on the KaMPAC board. There is ever-increasing auxiliary member interest in legislation and political action.

State officers and chairmen used the summer months to prepare for their year's activities. These will start following the state fall board of directors' meeting in September.

Like I said, those "lazy, hazy, crazy days of summer" haven't been exactly non-productive. Disorganized maybe, but never non-productive. Besides, we have to take time to be wives and mothers as well as auxiliary members, now don't we? Which brings another thought to mind . . . it doesn't seem likely that the country will succumb entirely to women's lib when three-fourths of the women can't parallel park a car. . . .

Yours for non-liberation,

Auxiliary Annie



### WILLIAM P. CALLAHAN, JR., M.D.

Dr. William P. Callahan, Jr., 53, Wichita, died on August 16, 1971. He was the son of Dr. William P. Callahan, Sr., former Kingman and Wichita physician, now living near Kingman.

Dr. Callahan, Jr., was born on September 20, 1918, in Wichita. He was a graduate of the University of Notre Dame and completed his medical education at Washington University Medical School, St. Louis, receiving his medical degree in 1943. He was head pathologist for St. Francis Hospital in Wichita for 17 years, and consultant pathologist for 13 Kansas Hospitals. He was director of the School for Certified Laboratory Assistants for Kansas, and a board member of the Schools of Pathology.

Survivors, in addition to his father, are his wife, two sons and two daughters.

---

### C. HERBERT SMITH, M.D.

Dr. C. Herbert Smith, Pittsburg, died on July 19, 1971, at the age of 77.

Dr. Smith was born at Windsor, Missouri, on July 24, 1894. He was graduated from the National University of Arts and Sciences at St. Louis, Missouri, in 1916. He practiced in Pittsburg, Kansas, from 1916 until his retirement.

A memorial fund has been established at Mt. Carmel Medical Center in Pittsburg.





THE  
Journal  
OF THE  
Kansas  
Medical  
Society



# Patients fell asleep quick

Dalmane (flurazepam HCl) 30 mg reduced awake time—both before and after falling asleep - by fifty percent of pretreatment values in patients with insomnia.<sup>1,2</sup>

Two sleep laboratory studies recently confirmed findings of earlier studies of this type, namely, that Dalmane 30 mg was effective in patients who had trouble falling asleep, staying asleep or both. One 30-mg capsule of Dalmane usually induced sleep within 22 minutes, decreased the number of awakenings and the wake time after the onset of sleep, and provided 7 to 8 hours of sleep without need to repeat dosage during the night.

These studies utilized identical protocols and included eight insomniac patients. Sleep laboratory measurements in a limited number of patients are derived from all-night electroencephalographic, electro-oculographic and electromyographic tracings. Unlike traditional methods of evaluation, they are quantitative, reproducible and projectable to large numbers of subjects.

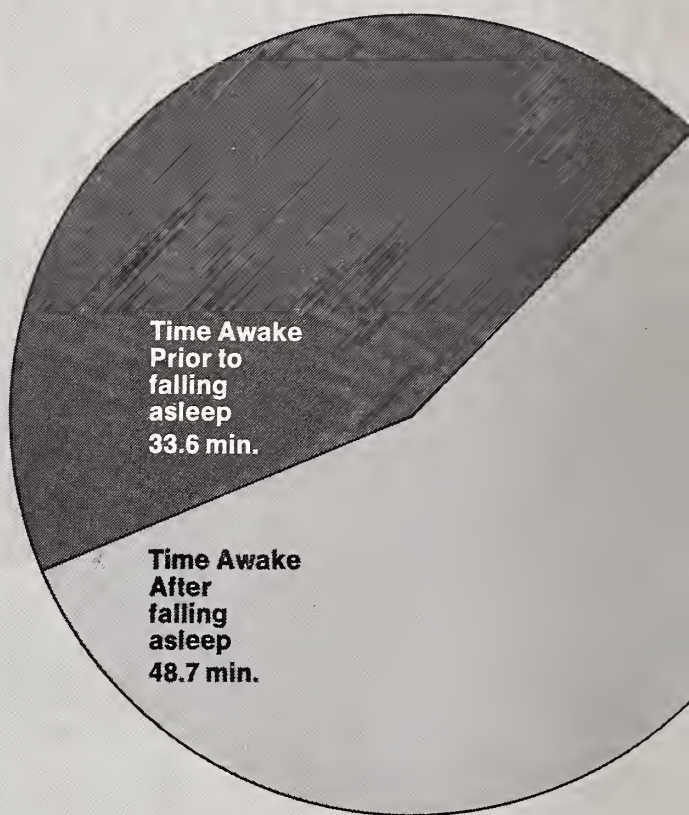
Results shown represent average values in all subjects for the three consecutive nights of placebo administration prior to Dalmane therapy and the seven consecutive nights on Dalmane 30 mg.

Dalmane is also relatively safe, as reported in clinical studies. Instances of morning "hang-over" have been relatively infrequent; paradoxical reactions (excitement) and hypotension have been rare. Dizziness, drowsiness, lightheadedness and the like were the side effects noted most frequently, particularly in the elderly or debilitated. (An initial dose of Dalmane 15 mg should be prescribed for these patients.)

**References:** 1. Frost, J. D., Jr.: "A System for Automatically Analyzing Sleep," Scientific Exhibit presented at Clinical Convention, A.M.A., Boston, Nov. 29-Dec. 2, 1970, and Aerospace M.A., Houston, April 26-29, 1971.

2. Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley, N.J.

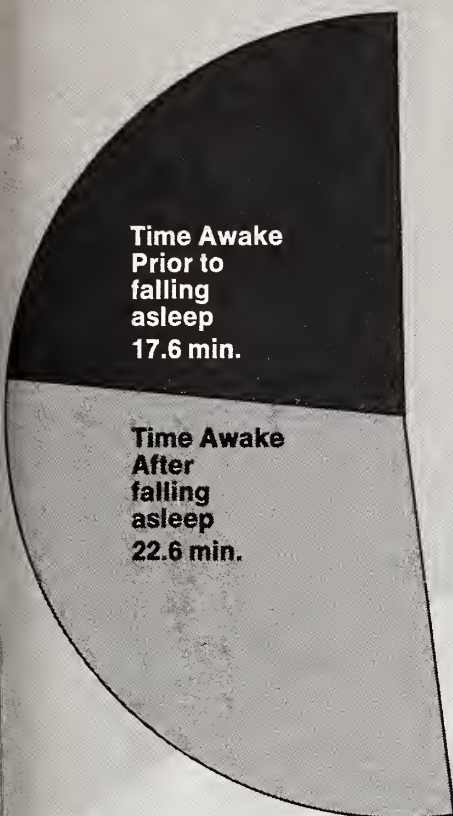
Before  
Dalmane  
(flurazepam HCl)





# and slept through the night

On  
Dalmane  
(flurazepam HCl)



ge sleep laboratory measurements in cited studies

meter	Before Dalmane	On Dalmane
required to fall asleep	33.6 min.	17.6 min.
time after onset of sleep	48.7 min.	22.6 min.
er of wakeful periods after		
et of sleep	12.2	8.4
sleep time	420.0 min.	447.5 min.
sleep percent	88.6	94.5

nical effectiveness as  
ven in the sleep laboratory

**Dalmane®**  
urazepam HCl)

30-mg capsule h.s.—usual adult dosage.

15-mg capsule h.s.—initial dosage for  
rly or debilitated patients.

**Before prescribing Dalmane (flurazepam HCl), please consult Complete Product Information, a summary of which follows:**

**Indications:** Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; and in acute or chronic medical situations requiring restful sleep. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended.

**Contraindications:** Known hypersensitivity to flurazepam HCl.

**Warnings:** Caution patients about possible combined effects with alcohol and other CNS depressants. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Use in women who are or may become pregnant only when potential benefits have been weighed against possible hazards. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage.

**Precautions:** In elderly and debilitated, initial dosage should be limited to 15 mg to preclude oversedation, dizziness and/or ataxia. If combined with other drugs having hypnotic or CNS-depressant effects, consider potential additive effects. Employ usual precautions in patients who are severely depressed, or with latent depression or suicidal tendencies. Periodic blood counts and liver and kidney function tests are advised during repeated therapy. Observe usual precautions in presence of impaired renal or hepatic function.

**Adverse Reactions:** Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported were headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins and alkaline phosphatase. Paradoxical reactions, e.g., excitement, stimulation and hyperactivity, have also been reported in rare instances.

**Supplied:** Capsules containing 15 mg or 30 mg flurazepam HCl.



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# The JOURNAL of the KANSAS MEDICAL SOCIETY

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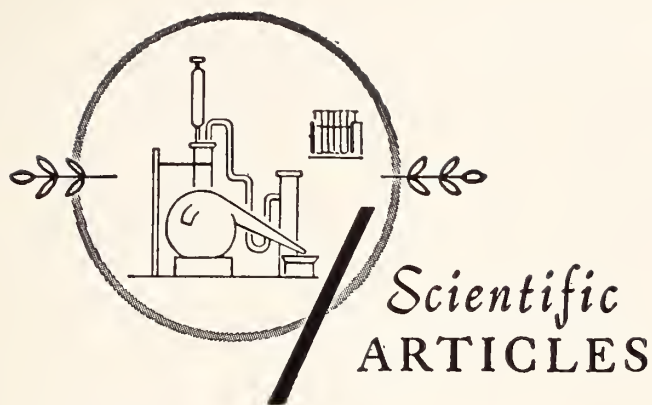
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# Multiple Myeloma

## *Chromosomal Abnormalities in Multiple Myeloma*

R. RANJINI, M.D., M.R.C.O.G., *Topeka*

MULTIPLE MYELOMA is a progressive proliferative disorder of plasma cells and their precursors. It is regarded as a neoplastic process of reticulo-endothelial system, fundamentally akin to leukemias and lymphomas. Chromosome aberrations occurring in leukemias are fairly well recognized and documented. There is, however, a paucity of reports on chromosome changes in multiple myeloma. Earliest cytogenetic studies on five cases found no demonstrable chromosome anomalies. Subsequent reports of 21 cases recorded abnormal karyotypes in 14 of them.

This paper describes seven cases of multiple myeloma seen in Topeka Veterans Administration Hospital, six of which showed chromosome abnormalities.

Chromosome studies were undertaken on all seven cases, before treatment, both by peripheral leukocyte culture and by direct analysis of aspirated sternal bone marrow cells. Peripheral blood culture was done by a modification of Moorhead's method and bone marrow analysis was accomplished by a modification of the direct method of Tjio and Whang. In three of these patients, studies were repeated during treatment. Analysis of metaphases from bone marrow revealed abnormalities in six out of seven, whereas, in culture of peripheral blood chromosome abnormalities appeared only in two.

*Table 1* shows morphology of myeloma cells and

serum protein patterns in the seven patients. Age group was 48 to 69. Large and small cells correspond to Olhagen's classification of myeloma cells of group A and B. Group A were mature, large plasma cells usually associated with hypergammaglobulinemia.

Group B were poorly differentiated, immature, often small cells, with presence of Bence Jones pro-

---

**Chromosome studies were carried out in seven cases of multiple myeloma. Analysis of bone marrow metaphase plates revealed abnormalities in six out of seven cases. Chromosome changes were characterized by their variability from case to case, as well as among different groups of cells in the same person. Structural changes were also noted, but to a lesser extent. Chromosome series more frequently involved in our series were C, D, and G. These chromosome abnormalities are reminiscent of those described in acute leukemias.**

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teinuria and with less likelihood of hypergammaglobulinemia. Case 3 is of interest in that there were mature cells present, Bence Jones proteinuria was negative, hypogammaglobulinemia, IgM absent, low IgG and IgA. This type is rather unusual since a monoclonal hypergammaglobulinemia characterizes most multiple myelomas. Bence Jones was negative in

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Presented at the annual meeting of the Kansas Chapter, American College of Physicians, Overland Park, Kansas, February 19, 1971.





TABLE 3  
VARIATIONS IN NO. OF CHROMOSOMES IN THE METAPHASE,  
WITH IDENTIFICATION OF THE ABNORMAL CHR. GROUPS

Case	Total No. Metaph.	46	47	48-49	Poly- ploid	45	44-43	Remarks
5. B.A. ....	60	40	7	1	2	10	—	
		21 Pseudo- diploidy	4 C+ 2 D+			4 D- 6 E- or F-		1. Hypodiploidy 2. Pseudodiploidy 3. Inequality
		10 Inequality 5 Normal	1 G+					
6. F.J. ....	55	28	9	2	2	13	1	
		No abnor- mality	3 G+ 2 F+ 4 C+	C+ and F+		7 C- 4 D- 2 F-		Hypodiploidy
7. C.A. ....	71	69	—	—	—	—	2	
		Normal					B- and C-	Normal

chromosomes, giant chromosomes, breaks, and gaps were also encountered. In addition to cell lines with aberrant karyotypes, a large percentage (20-50 per cent) of cells in these six cases showed normal chromosome numbers and configuration. These apparently normal karyotypes occurring in its entirety in case seven, or in combination with abnormal cell lines, as in cases 1 through 6, may represent normal bone marrow cells in mitosis. It is also possible that chromosomal or genetic changes occur in all cases of multiple myeloma, but some of these changes are manifestations of molecular derangement and hence submicroscopic and thus not demonstrable in the usual chromosome study with photomicroscope. More electromicroscope studies of chromosomes will be needed to bring out such submicroscopic changes.

Detailed analysis of the karyotypes revealed that in aneuploidy, there was involvement of almost all groups, but some groups were more frequently affected than others. Involvement of C, D and G Series was more frequent. Less frequently were those of F and A Series. Extra chromosomes or loss in C Series were found with almost equal frequency. Pseudoploidy here was characterized by a wide variety of rearrangements, but more often C, D, G, and A groups were involved. Among abnormal karyotypes, several had inequality of homologous chromosomes in the pairs (suggesting translocation),

presence of a large chromosome, deletion of short or long arms of individual chromosomes. Polyploid metaphase plates varying in number from 1 to 3, but short of tetraphoid were observed in cases 1 through 6.

The incidence of chromosome abnormalities in the present series is much greater than those reported by Bottura and is comparable to the results of DAS, K.C. The wide range of variability in chromosome rearrangements was a conspicuous feature of the abnormalities in our cases. The diversity of these changes was noted not only from one case to the other, but also in different groups of metaphase plates in the individual cases. The unusual feature was the heterogenous range of changes in chromosomes for which no characteristic pattern could be established, nor could any consistent pattern be established. This is comparable to reports of Castoldi, *et al.*, and Lewis, *et al.* This diversity of chromosome findings in multiple myeloma, however, contrasts with the relatively consistent pattern observed in Waldenstrom's macroglobulinemia. Precise relationship of aneuploidy and polyploidy to leukemogenesis and neoplasia remains as yet to be clarified. Natural history of multiple myeloma is a malignant process. One characteristic of malignant tissues is karyotypic variation and, therefore, aneuploidy in multiple myeloma is a reflection of malignant process.

# Hyperosmolar Coma

## A Case Report and Review of the Literature

EDWIN L. PETRIK, M.D., *Topeka*

THIS 70-YEAR-OLD Caucasian male was admitted to the medical service complaining of dizziness, falling to one side and profound thirst of five days' duration. Six months previously this man underwent a hernia repair and a retropubic prostatectomy without incident. His fasting blood sugar was mildly elevated at 125 milligrams per cent at that time. Medications at time of admission: Aldoril 1 tablet daily and Digoxin 0.25 milligram daily. There was no personal nor family history of diabetes.

Physical examination: Temperature was 100; pulse 102, regular; B/P 140/110; respiratory rate was 26. Skin was dry. There was a sweet odor on his breath. His speech was slurred. He was complaining of blurring vision on visual examination. His gait was staggering. He had a tendency to fall to the left. His sensorium appeared to be fading and he appeared to be losing consciousness at time of initial examination. There was right facial weakness as well as weakness of his right arm and leg. Sticky moist

there was evidence of dehydration because of his pulmonary findings, it was initially felt that impending congestive heart failure was a real possibility. His therapy and clinical course are outlined in *Table 2*.

This man was treated in his first six hours with 1200 cubic centimeters of intravenous fluids consisting of normal saline with 20 mEq. potassium chloride per liter at a rate of 200 cubic centimeters per hour. Subsequently the fluid was changed to 5 per cent Dextrose in one-fourth normal saline. He was treated with 470 units of regular insulin during his first 17 hours of admission. At this point in time (17 hours following admission), which was the next morning, the patient's blood sugar was 104; sodium was 157; potassium 5.1; chloride 123; his arterial pH was 7.49 and a BUN of 75.

At this time the rate of intravenous fluid administration consisting of 5 per cent Dextrose in one-fourth normal saline was increased to 1000 cubic centimeters per hour for the next five hours, then 500 cubic centimeters per hour for the next four hours. Following this marked increase in rate of fluid administration, the patient began to diurese profusely and his sensorium began to clear and he improved rapidly. Eighty-nine hours following his admission his fasting blood sugar was 98; sodium 140; potassium 4.3; chloride 104, and BUN 32. This man fully recovered with no neurologic deficit and was discharged ambulatory on an 1800 calorie diabetic diet and NPH insulin 15 units. Since discharge he has been followed in the outpatient clinic and has been doing well with a recent glucose tolerance test as indicated in *Table 3*.

### Discussion

Hyperosmolar nonketoacidotic diabetic coma was first described in the English literature by Doctors Sament and Schwartz in the 1957 *South African Medical Journal*, although actually the syndrome was first recorded by Umber-Berlin in a 1924 German publication. By 1968 there were some 50 cases reported in the World Literature with a mortality rate of 50 per cent. By May 1970 there were at least 84 cases reported in the English language journals and nearly twice that number in the World Literature.

TABLE 1

#### ADMISSION LABORATORY DATA

Blood Glucose .....	1614 mg. %
Sodium .....	142
Potassium .....	3.8
Chloride .....	98
CO <sub>2</sub> .....	24
Serum Acetone .....	small
Arterial pH .....	7.40
BUN .....	11
Urine Glucose .....	4+
Urine Acetone .....	small

Serum osmolarity calculated out to be 384 M OSM/KG (normal 270-290).

noises were heard in his left base. These were not felt to be true rales.

It appeared that this man was in the process of evolving a cerebrovascular accident and even though

Presented at the annual meeting of the Kansas Chapter, American College of Physicians, Overland Park, Kansas, February 19, 1971.



TABLE 2

	Admission	Time After Admission			7:00 a.m.		26 hrs.	7:00 a.m.	7:00 a.m.
		3 hrs.	6 hrs.	9 hrs.	17 hrs.	22 hrs.		41 hrs.	89 hrs.
Blood Glucose	1614	1200	837	484	104		168	211	98
Sodium	142			154	157		150	142	140
Potassium	3.8			2.4	5.1		3.5	3.8	4.3
Chloride	98			108	123		120	107	104
CO <sub>2</sub>	24								
Serum acetone	Small		Neg.						
Arterial pH	7.40				7.49				
BUN	11				75			72	32
Urine									
Glucose	4+	4+	4+	4+	2+	Trace	Neg.	1+	
Acetone	Small	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	
Volume		400 cc.	2 cc.	6 cc.	20 cc.	50 cc.	375 cc.		
Therapy									
Reg. insulin IV 100 U		50	—	—				Not less than 400 cc/hr. and up to 500 cc/hr.	
Sub Q 100 U		65	60	65	30				
N.S. 20 Meq. Kcl/1 200 cc/hr.								DC IV 120 gm. Cbh. diet	
					100 cc/hr.	5% D 5 D			
						1/4 N.S. 1/4 N.S.			
					15 U Reg. I	15 U			
					1000 cc/hr.	500 cc/hr.			

Personal observation within the past two to three years by many knowledgeable observers in this field suggests that this disorder certainly occurs much more frequently than these reports would suggest. However, there still seems to be a mortality rate in

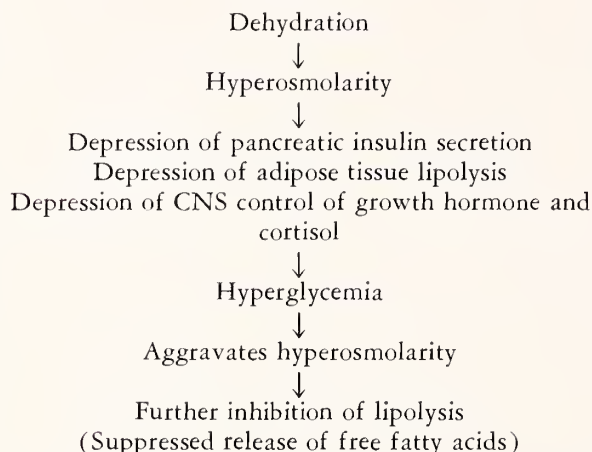
TABLE 3

	Blood Glucose Per Cent	Urine Glucose
Fasting blood sugar	93 mg.	Negative
1/2 hour	165 mg.	Negative
1 hour	207 mg.	Negative
2 hour	185 mg.	Negative
3 hour	124 mg.	Negative
4 hour	68 mg.	Negative
5 hour	67 mg.	Negative

the range of 40 per cent, considerably higher than is found in diabetic ketoacidotic coma among patients of comparable age. Half of these deaths were attributed to other pre-existing serious disease or precipitating illness such as pancreatitis or infection. Isolated cases of potassium depletion or aspiration of gastric contents during coma were also observed. By far, the largest number of deaths seem to be due to severe dehydration with progressive shock unresponsive to treatment.

It has been shown that intracranial pressure rises in hyperglycemic dogs when blood sugar is rapidly lowered during rehydration with isotonic saline. Lowering blood glucose rapidly may actually precipitate shock because, before sodium deficits have been adequately replaced, hyperglycemia may be responsible for obligating a significant per cent of what plasma volume is available. It is also known that patients with hyperglycemia and hyperosmolar non-ketoacidotic diabetic conditions are more sensitive to insulin than those with acidosis. Apparently, acidosis has some dehydratory effect on the insulin molecule. The literature is somewhat confusing on the use of insulin in this condition, with a considerable variation in insulin sensitivity reported. Patients have been described in which very little or even no insulin was required for patient's recovery with this condition while some case reports report up to 4600 units of regular insulin within a matter of a few hours as being necessary. A proposed mechanism for the development of this syndrome is as follows (Table 4). Once dehydration becomes established from whatever cause, i.e. gastroenteritis, vigorous diuretic therapy or inadequate fluid intake from whatever cause, this cycle can become established with the progressive development of hyperosmolarity until the cycle is interrupted at some point. In summary, it would appear that the best method of interruption or the correct therapy for this condi-

TABLE 4



tion consists of adequate rehydration with large volumes of hypotonic saline preferably one-fourth normal saline with or without Dextrose and small amounts of regular insulin. Following recovery, these patients can often be adequately controlled with car-

bhydrate restriction alone or small doses of oral hypoglycemic agents or insulin as in this case.

## References

- Anderson, James: Hyperglycemic diabetic stupor: A spectrum of disorders. *Military Med.* 133:538-542.
- Gerich, John: Metabolic findings offered to explain lack of ketosis. *Diabetes Outlook*, September, 1970.
- Jackson, W. P. U. and Forman, R.: Hyperosmolar nonketotic diabetic coma. *Diabetes* 15:714-722, October, 1966.
- Johnson, Robert *et al.*: Mechanisms and management of hyperosmolar coma without ketoacidosis in the diabetic. *Diabetes* 18:111-116, February, 1969.
- Kolodny, Howard, and Sherman, Lawrence: Hyperglycemic nonketotic coma in insulin-dependent diabetes mellitus. *J.A.M.A.* 203:461-463, February 12, 1968.
- Lotz, Myron and Geraghty, Michael: Hyperglycemic, hyperosmolar, nonketotic coma in a ketosis-prone juvenile diabetic. *Ann. Intern. Med.* 69:1245-1246, December, 1968.
- Martin, Anthony: Hyperosmolar nonketoacidotic diabetic coma. *Postgrad. Med. J.* 44:218-222, March, 1968.
- McCurdy, Donna: Hyperosmolar hyperglycemic nonketotic diabetic coma. *Med. Clin. N. Amer.* 54:683-699, May, 1970.
- Sament, S. and Schwartz, M. B.: Severe diabetic stupor without ketosis. *South African Medical Journal.* 31:893-894.
- Spenny, J. G., Eure, C. A. and Kreisburg, R. A.: Hyperglycemic, hyperosmolar, nonketoacidotic diabetes. *Diabetes* 18:107-110, February, 1969.

## THERAPEUTIC ABORTION PAYMENTS

A recent ruling from the Kansas Attorney General's Office stated that a hospital must be both licensed *and* accredited in order to perform therapeutic abortions under the therapeutic abortion law passed by the Legislature.

Kansas Blue Shield, as the fiscal administrator for the Title XIX Program, has been advised by the Department of Social Welfare that we must comply with this ruling. Therefore, effective immediately, therapeutic abortions performed in a non-accredited hospital will not be paid for Title XIX patients.

### NAME OF HOSPITAL NEEDED ON TITLE XIX CLAIMS

Physician's claims for therapeutic abortions which are submitted to the Title XIX claims area, *must contain the name of the hospital* where the services were performed. If the name of the hospital is not given, the claim will be *returned* for this information.

### REMEMBER:

The correct procedure codes for therapeutic abortion are:

4861—Therapeutic abortion, by D & C or Equivalent Procedures.

4862—Therapeutic abortion, by Hysterotomy or Saline Injection.

9026—Consultation with written report, for therapeutic abortion.



# Abstract

## *A New Technique of Bronchial Visualization With Fiberoptics*

JOSEPH F. SMIDDY, M.D.,  
WILLIAM E. RUTH, M.D., F.A.C.P., and  
GERALD R. KERBY, M.D., F.A.C.P., *Kansas City, Kansas*

### Introduction

FOR MANY YEARS, bronchoscopy with a rigid metal tube has been accepted as an important diagnostic and therapeutic tool in the management of patients with many pulmonary conditions. A new flexible fiberoptic bronchoscope has become available which adds new dimensions to the usefulness of bronchoscopy.

### Methods

We have performed 150 bronchoscopies with the Olympus Model BF Flexible Fiberoptic Bronchoscope. This instrument has a working length of 55.7 centimeters, a range of observation of 5 to 45 millimeters, and the diameter of the tip is 5 millimeters. The tip can be manipulated by remote control upward 130° and downward 30°. It has a forward field of view of 83°. There is a 1 millimeter channel through which anesthetic solutions can be injected during insertion of the instrument. Also, this channel can be used for brush biopsy sampling, bronchial washings for cytology, and the aspiration of inspissated mucous plugs.

The instrument can easily be inserted through a standard metal bronchoscope or endotracheal tube. We have designed a connector which has a bronchoscopy port that allows us to ventilate patients on endotracheal tubes while carrying out a diagnostic or therapeutic bronchoscopy.

For routine bronchoscopy we prefer the transnasal route at the bedside. This is well tolerated and performed with ease. The patient's nose is sprayed with Neo-Synephrine 1/4 per cent to allow maximal passageway. The patient's nose and throat are sprayed with 2 cubic centimeters of Pontocaine 2 per cent. The distal end of the instrument is coated with Xylocaine jelly.

The instrument is passed through the nasopharynx under direct vision. Upon visualization of the vocal

cords, 2 cubic centimeters of Xylocaine 1 per cent are injected through the channel onto the cords. Then the scope is passed through the cords and into the trachea. More Xylocaine can be applied locally through the channel not to exceed toxic limits.

Whenever a suspicious lesion is visualized, it is brushed vigorously with a nylon brush and then the sample is smeared on a slide for cytological study. Also, bronchial washings for cytology are taken from suspicious areas.

### Results

These 150 bronchoscopies were performed on patients having hemoptysis, aspiration of foreign material in the tracheobronchial tree, plugged secretions, airway obstruction, or suspicion of neoplasm. It has been our general experience that the site of bleeding is easily localized in patients with hemoptysis.

Of twelve patients who were bronchoscoped because of x-ray changes suspicious of tumor, an endobronchial lesion was found with fiberoptic scope in eight patients. In four of these patients a definitive pathological diagnosis of cancer was made from the cytological specimens obtained. In the other four patients an area suspicious for tumor was visualized and photographed, but our cytology samples were negative. Of these latter four, three were later proven to have cancer, two at the time of thoracotomy, and one by standard bronchoscopy with bite biopsy. Forty bronchoscopies were done for the removal of plugged secretions. In every case the tracheobronchial tree was cleaned out to the sub-segmental level without difficulty.

### Summary

Flexible fiberoptic bronchoscopy can be performed at bedside with minimal discomfort to the patient. It provides improved visualization of the tracheobronchial tree and because of the ease of photography provides permanent documentation of the lesions encountered. Direct washings obtained from the area of pathology are of great diagnostic assistance. Inspissated mucous plugs can be easily removed from patients with asthma or respiratory failure.

Abstract of the paper presented by Dr. Smiddy at the annual meeting of the Kansas Chapter, American College of Physicians, Overland Park, Kansas, February 19, 1971.

# Colonoscopy

## *The Visualization of the Colon Up to the Splenic Flexure*

DIPAK CHOWDHURY, M.D. and

ARTHUR P. KLOTZ, M.D., *Kansas City, Kansas*

MODERN GASTROINTESTINAL endoscopy can now provide beautiful color photographic visualization of disease plus tissue diagnosis by biopsy almost routinely. It offers precision diagnosis, rationalizes therapy and often helps physicians in an overall prognosis.

The rigid proctosigmoidoscope has been an extremely useful instrument for the examination of the anus and rectum. The introduction of the fiberoptic colonoscope has made it possible to visualize the disease processes in the colon beyond the rectosigmoid junction.

Not until Japanese ingenuity began producing remarkable fiberoptic instruments recently did endoscopy become increasingly popular, even though old style fiberoptic scopes were already available. Lack of popularity with the older fiberoptic instruments resulted from multiple limitations, particularly in the flexibility and visual clarity provided by the instruments.

The Olympus flexible fiberoptic colonoscope has a working length of 80 centimeters, is 13.6 millimeters in diameter and has a distal 8.65 centimeter segment which can rotate through 180° in one axis. It is equipped with an end-on view optic system with 2-5 centimeters range of view, and cold light source, fingertip control of channels for suction, flushing, air insufflation, and photography and biopsy accessories for documentation of endoscopy findings.

Indications for colonoscopy include the following: all lesions of the sigmoid and descending colon, unexplained hematochezia, evaluation of diverticulosis and diverticulitis, assessment of severity and extent of inflammatory bowel disease, assessment of skip areas in inflammatory bowel disease, assessment of neoplastic changes in inflammatory bowel disease.

A thorough cleansing of the colon is essential for the procedure, however, vigorous cleansing is avoided in inflammatory bowel disease. The preparation includes a liquid supper the night before, nothing by mouth in the morning, and high colonic warm water enemas until clear two hours prior to the procedure. The patient is usually premedicated with 75 milli-

grams of meperidine and 1/100 gram of atropine. Soap water enemas are avoided as the erythema of the mucosa resulting from enemas given within two hours of the procedure may impart a false impression of erythema of the mucosa. The anticholinergic probably helps to overcome the spasm of the colon.

Unlike other flexible endoscopic procedures, colonoscopy demands the help of one assistant throughout the procedure. With the patient lying in the left lateral position with the lower extremities partially flexed, the well lubricated scope is gently inserted into the rectum via the anoscope which gently opens the anus, facilitating introduction.

The endoscopist tries to visualize the lumen and directs the tip accordingly while his assistant continues to lubricate and introduce the scope under his direction. However, it is not always possible to visualize the lumen, especially in the rectum, therefore, the tip of the instrument is directed to conform to the curvatures of the rectum. Once the sigmoid colon is entered, the instrument should be manipulated to visualize the lumen while proceeding with the introduction. At times the lumen cannot be kept in focus but as long as the mucosa of the colon is sliding by and no resistance is felt, it is safe to continue. The negotiation of the curvature between sigmoid and descending colon is the most difficult part of the procedure. Some endoscopists, including us, have found that a complete rotation of the colonoscope through 180° with the scope in the distal sigmoid colon helps to straighten this acute flexure and negotiate the curvature. Whenever resistance is felt the scope should be pulled back and an attempt should be made to visualize the lumen. The instrument should never be forced against resistance. The endoscopist should always keep in mind that the large bowel is easy to perforate. It is imperative to take extra precautions to avoid trauma to patients with inflammatory bowel disease. Proper attention should be given to the patient to gain his confidence and avoid causing pain throughout the procedure.

As a rule, the colon is usually well visualized during withdrawal of the scope, therefore, extended scrutiny is avoided during introduction to shorten the time, unless a lesion is grossly obvious. In our

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Presented at the annual meeting of the Kansas Chapter, American College of Physicians, Overland Park, Kansas, February 19, 1971.



experience we found that in many cases during withdrawal, the sigmoid colon tends to slide back too rapidly. This is probably because the sigmoid colon is telescoped over the scope during introduction because of its greater mobility. Therefore, it may become necessary to hold the mucosa gently with the biopsy forceps during withdrawal. In our series of 40 patients, we have performed examination up to the splenic flexure in some, and up to 80 centimeters in most cases.

We have been able to observe and document inflammatory bowel disease of various activity including its variants, minute and large polyps from 35-65 centimeters from the anus, melanosis coli of the descending colon, diverticula of the distal sigmoid, and adenocarcinoma of the sigmoid colon at 38 centimeters from the anus. We have documented our observation by color photography and also resorted to biopsies whenever indicated. Following biopsy, one should be careful to observe cessation of bleeding before withdrawing. In our series of 40 patients, we

have not encountered any complications. The aspiration of all the air before withdrawal keeps the patient more comfortable at the completion of the procedure.

We are faced with the grim fact that cancer of the large bowel (approximately 1 per cent) is second only to lung cancer, and almost 32 per cent resides in the sigmoid and descending colon, an area that is now accessible by colonoscopy. So far, there is no specific method of very early detection of cancer of the colon unless radioimmuno-assay proves to be a screening procedure for the future. We feel that colonoscopy can not only detect and document x-ray findings, but it may well document lesions too small and inconspicuous for detection by routine x-ray or special air contrast studies.

In our experience to date, it has been a rewarding procedure, and though the cost of the instrument and the relative complexity of the procedure precludes its routine use, further evaluation should be pursued vigorously.



A Council on Thrombosis has been established by the American Heart Association to provide a forum for scientists and clinicians in the field. It will focus on the fundamental problem of thrombogenesis, examine the condition in all its ramifications rather than solely through its effect on the heart, brain and kidney.

Membership in the council is open to physicians, scientists, members of other health professions and laymen who belong to local Heart Associations. For further information or to make application for membership contact the Kansas Heart Association in Topeka or in Sedgwick County contact the Sedgwick County Heart Association, 455 North Erie, Wichita.

# Chronic Active Hepatitis

## *A Survey of Community Hospitals*

DONALD D. MOELLER, M.D.; DAVID JACOBS, M.D., and  
ROBERT R. LAING, M.D., *Kansas City, Kansas*

CHRONIC ACTIVE HEPATITIS is a disease of unknown etiology which has a variable but unremitting course. Patients may present with cirrhosis and associated signs and symptoms of portal hypertension. In the absence of cirrhosis, the symptoms may consist of anorexia, malaise, weakness, fatigability, low grade fever, rash, and polyarthralgias. Laboratory findings are also variable, but enzyme elevations are common (SGOT and alkaline phosphatase). In addition, the bilirubin and total proteins are frequently high. If cirrhosis is present, the albumin is usually low.

The studies of chronic active hepatitis in community hospitals have not been reported. The purpose of this paper is to consider the disease in community hospitals, and to compare our data with that of larger series taken from university medical centers.<sup>1, 2</sup>

### Methods and Materials

Four community hospitals with combined capacity of approximately 1,000 beds were surveyed. Liver biopsies obtained between July 1966 to July 1970 were reviewed. The criteria of Alpert<sup>1</sup> and Mistilis<sup>2</sup> were used for selection of cases. One of the authors, a pathologist, reviewed the liver biopsies without benefit of clinical information. Two of the authors reviewed the clinical information. A combined decision regarding the diagnosis of chronic active hepatitis was made if both the histological and clinical pictures were compatible. *Table 1* lists some of the histological criteria which were used, based largely on the criteria of Alpert and Mistilis.

Charts of those patients who met the criteria for the diagnosis of chronic active hepatitis were then reviewed to obtain data for comparison with the studies of Alpert and Mistilis.

### Results

Ten cases of chronic active hepatitis were found. It should be noted that all of these cases were subclassified as chronic aggressive hepatitis. No cases of chronic persistent hepatitis were found. The classification of de Groote<sup>3</sup> was used.

The clinical features of these patients are contained in *Table 2*. Six of the patients were women. Age range was from 16 to 66 years. The mean age was 44 years. Eight patients had L.E. preparations, of which three were positive. The Australia antigen

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**A four-year retrospective survey of four medium-sized community hospitals yielded ten cases of chronic active hepatitis. Data from this group of patients were compared with large university series. There was generally good agreement of data in the three groups. No patient had both a positive L.E. preparation and a positive Australia antigen, although six patients were positive to one of these tests.**

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(Hepatitis Associated Antigen or H.A.A.) was positive in three of eight patients. No patient had both a positive L.E. preparation and positive Australia antigen. Adequate follow-up information was obtained in nine patients, of whom six are living. They are all being maintained on steroid therapy. The duration of their disease varies from six months to 16 years. All three of the patients who expired had the onset of their disease after blood transfusions for surgery. Their disease processes were rapidly progressive, none surviving longer than one year.

*Table 3* shows a comparison of data from our series with the respective series of Alpert and Mistilis. Fifteen categories of information could be compared. The mean ages and age ranges were not significantly different. Each series showed a preponderance of females. The incidence of polyarthralgias was similar. A history of jaundice was noted in most patients. Our series contained a higher frequency of positive L.E. preparations. Reversed albumin/globulin ratios were present. A lower per cent of Alpert's patients were treated with steroids.

The mean SGOT was higher in our series than that of the other two series. However, the alkaline phosphatase elevation was similar. One half of Mistilis' patients were anemic, while only 20 per cent of our patients had hemoglobins less than 12 grams

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Presented at the annual meeting of the Kansas Chapter, American College of Physicians, Overland Park, Kansas, February 19, 1971.

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TABLE 1  
HISTOLOGICAL FEATURES OF CAH:  
INFLAMMATION PLUS FIBROSIS

1. Erosion of the limiting plates.
2. Feathery degeneration of hepatocytes, hepatocellular injury and necrosis with greatest activity at the lobular periphery.
3. Mesenchymal activation.
4. Triaditis with spilling over of exudate into lobular periphery.
  - a. Triad round cell infiltration (plasma cells, lymphoreticular cells).
  - b. Triad infiltration with eosinophiles and polymorphonuclear cells.
5. Progressive fibrosis extending into lobule.
6. Absence of fat in liver cells.

per cent. Thrombocytopenia was noted frequently in Mistilis' series and was not found in our patients. Diarrhea and colitis were found in small numbers in each series. Hepatomegaly was common and skin lesions infrequent.

Thus, of the 15 categories of comparison, there were four items of difference. Our patients had an increased frequency of L.E. preparations, and the mean SGOT was significantly higher. On the other hand, Mistilis' patients were frequently anemic and thrombocytopenic, whereas this was an unusual finding in our cases.

### Discussion

Chronic active hepatitis was first described in 1951 by Kunkel.<sup>4</sup> Since then many authors have described this entity, with the subsequent proliferation of multiple diagnostic terms (see Table 4).<sup>3, 5-10</sup> In 1967, the most widely accepted term became chronic ac-

TABLE 2  
CLINICAL FEATURES

<i>Patient</i>	<i>Sex</i>	<i>Age</i>	<i>L.E. Test</i>	<i>Australia Antigen</i>	<i>Patient Alive?</i>	<i>Duration of Patient's Illness</i>	<i>Comments</i>
E.R. ....	F	66	positive	negative	yes	2 years	Doing well on steroid therapy. Also, has diagnosis of chronic ulcerative colitis.
E.M. ....	F	53	positive	not done	unknown	onset of disease in 1968	Patient lost to follow-up.
P.L. ....	M	33	negative	not done	no	1 year	Onset of disease after transfusions for cholecystectomy. Portal hypertension in terminal phase.
F.D. ....	F	44	negative	negative	yes	16 years	Patient doing well on steroid therapy.
L.S. ....	F	18	positive	negative	yes	2 years	Patient had splenectomy in January 1971 for hypersplenism. Doing well on steroid therapy.
J.C. ....	M	62	not done	positive	no	1 year	Onset of disease after blood transfusions (surgery for diverticulitis). Portal hypertension terminally.
J.F. ....	F	66	not done	positive	no	10 months	Onset of disease after surgery for renal tuberculosis. Was on INH and PAS treatment. Portal hypertension terminally.
M.M. ....	F	52	negative	negative	yes	18 months	Persistent fatigue in spite of steroid therapy.
D.M. ....	M	29	negative	positive	yes	11 years	Had 2 episodes of jaundice 11 years ago while addicted to narcotics. Has not taken narcotics for 10 years. Fatigue in spite of steroid therapy.
R.R. ....	M	16	negative	negative	yes	6 months	Doing well on steroid therapy.

TABLE 3  
COMPARISON OF DATA FROM THREE SERIES

	<i>Kansas City Com- munity Hospital Series</i>	<i>Alpert's Series</i>	<i>Mistilis' Series</i>
Mean age .....	44	38	8-72
			50% between 11-30
Sex F/M ratio .....	(6/4) 60% females	(28/21) 56% females	(65/16) 80% females
Polyarthralgia .....	10%	(7/49) 14%	(15/82) 18%
History of jaundice .....	90%	No data	80%
Positive L.E. Prep .....	(3/8) 38%	(3/16) 19%	(12/82) 15%
Positive Australia antigen .....	(3/8) 38%	No data	No data
Albumin/globulin ratio .....	41%	37%	No data
Steroid therapy .....	(8/10) 80%	(8/28) 28%	(50/82) 61%
Mean SGOT, divided by upper limits of normal .....	15 (equals 15 times upper limit of normal)	3.5	6
Mean alkaline phosphatase (times upper limits) .....	2.8	No data	1.4
Leukopenia .....	(4/10) 40%	No data	No data
Hemoglobin less than 12 gms.% .....	(2/10) 20%	No data	(41/82) 50%
Platelet count less than 100,000 .....	(0/9) 0%	No data	(33/82) 40%
Diarrhea .....	(0/10) 0%	No data	(13/82) 17%
Colitis .....	(1/10) 10%	(2/49) 4%	(9/82) 11%
Hepatomegaly .....	(8/10) 80%	(32/49) 60%	(54/82) 75%
Skin lesions .....	(3/10) 30%	No data	(16/82) 20%

tive hepatitis.<sup>3</sup> The etiology of this disease is still unknown. However, the autoimmune concept as championed by Mackay<sup>7</sup> and more recently the finding of persistent viral antigenemia<sup>11</sup> has led to some clarification of pathogenetic mechanisms.

Since papers on the incidence of chronic active hepatitis in community hospitals have not been published to our knowledge, we elected to study the frequency of the disease in this setting, and to compare these patients with those seen at university medical centers.

Retrospective analysis of liver biopsies obtained in a four-year period in four community hospitals totaling 1,000 beds yielded ten well authenticated cases. When community hospital patients were compared with the large series of Alpert and Mistilis, there was general agreement in most categories of information. Differences included a higher incidence of positive L.E. preparations in our series (38 per cent) as compared to Alpert and Mistilis (19 per cent and 15 per cent respectively), and higher mean SGOT determinations in the present series. However, we used only the initial SGOT determination on the hospitalization when the diagnosis was made. Both Alpert and Mistilis used the mean of serial determinations. Since the disease process waxes and wanes, it is likely that their SGOT values were low-

ered by measurements obtained during remissions of the disease process.

Mistilis found anemia and thrombocytopenia considerably more often than we did. Since his patients had been followed longer than ours (up to 20 years), it is possible that these findings were related to a higher percentage of patients with portal hypertension.

Nevertheless, there was generally good agreement between the data obtained from our patients and those of Alpert and Mistilis.

Although the test for Australia antigen was not available at the time of publication of Alpert's and

TABLE 4  
DIAGNOSTIC TERMS

1. Chronic Liver Disease in Young Women<sup>5</sup>
  2. Plasma Cell Hepatitis<sup>6</sup>
  3. Active Juvenile Cirrhosis<sup>9</sup>
  4. Subacute Hepatitis<sup>10</sup>
  5. Lupoid Hepatitis<sup>8</sup>
  6. Autoimmune Hepatitis<sup>7</sup>
  7. Chronic Active Hepatitis<sup>3</sup>

(Continued on page 476)



# Medical or Surgical?

## *The Role of Surgery in the Treatment of Ulcerative Colitis: An Internist's View*

J. WALKER BUTIN, M.D.,\* *Wichita*

LONG A SUBJECT of controversy, the proper place of surgery in the management of ulcerative colitis deserves the studied consideration of every physician who treats the disease. Surgical removal of the colon, providing as it does the only certain cure for this dreaded disease, may be applicable not only to the acutely ill individual requiring an emergency procedure, but to the patient with more stable disease who endures a significant degree of disability and, as time progresses, faces the possible development of anaplastic malignancy in his colon.

Therefore, I have reviewed my experiences with approximately 75 cases of chronic ulcerative colitis in 18 years of practice of internal medicine and gastroenterology at the Wichita Clinic, and herewith present some illustrative examples of the management of about one-third of them by operative intervention. The indications for and timing of this surgery are particularly emphasized. In nearly all cases this eventually involved total colectomy and formation of an ileostomy in a single stage procedure.

### Diagnostic Considerations

Although the medical literature of the last ten years has stressed the differentiation between two main types of inflammatory bowel disease,<sup>1</sup> I am one of many clinicians who find it difficult to clearly distinguish between idiopathic ulcerative colitis and granulomatous or Crohn's colitis. In view of the overlap of clinical, x-ray, and pathological findings in these conditions, no attempt was made to review histologically the present series of cases, most of whom had been seen long before the new concept was enunciated. On the other hand, any cases that had a previous pathologic diagnosis of regional enteritis, or of granulomatous colitis, were automatically eliminated.

### Natural History of Disease

Bargen of the Mayo Clinic pointed out years ago that the usual variety of ulcerative colitis begins at

the anorectal junction and "proceeds relentlessly orad!"<sup>2</sup> It can be added that all aspects of the rectal mucosa are diffusely inflamed. This constant diffuse rectal involvement lends great diagnostic significance to the proctoscopic examination, for it allows differentiation from other entities producing diarrhea. These include Crohn's disease or regional enterocolitis, which begins in the area of the ileocecal valve, or occasionally in "skip" areas throughout the colon (*Table 1*). This entity involves the rectum

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**It is my belief that idiopathic ulcerative colitis with universal involvement is a disease whose unpredictable, but often progressive course constitutes a life-threatening situation to the individual. Since many of these patients are younger than age 20, the statistical chance of their living out their normal life span is greatly reduced. Removal of the colon is a formidable surgical procedure with far reaching and permanent sequelae, but the cure which it produces in a case of ulcerative colitis is often the best alternative for the unfortunate person so afflicted. Accurate judgment and sympathetic practice of the "art of medicine" are required of the physician in dealing with these patients and their families if the challenge of properly timing such surgery is to be met.**

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only secondarily and often incompletely. Others have described the tendency of ulcerative colitis to extend proximally as an "orderly march to the terminal ileum,"<sup>3</sup> but certain cases have been observed to remain localized in the distal segments of the colon, and to show insufficient mucosal change to be diagnosed radiologically. These have been called chronic ulcerative proctitis or proctosigmoiditis,<sup>4</sup> and the diagnosis can be made only by endoscopic examination which reveals the typical changes in the mucosa. Biopsy of the mucosa usually produces a diagnosis

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TABLE 1

(Illustrates concept of differentiation of inflammatory bowel disease by original location in bowel.)

## COLITIS

*Original Site of Disease*

- A. Terminal rectum (Idiopathic ulcerative colitis)
- B. Elsewhere (Granulomatous—Crohn's—Colitis)
  - 1. Ileocecal area
  - 2. "Skip areas"

of non-specific inflammation. Rarely an indication for surgery, this variety of colitis will not be considered further in this paper. On the other end of the spectrum is so-called "universal" involvement of the colon, which may include the adjacent terminal ileum. Often present when the individual case is first encountered, this type of colitis regularly warrants consideration of surgical attack (*Table 2*).

A classification of the clinical varieties of ulcerative colitis in relation to their prognosis has been made by Bockus and his group at the Graduate Hospital of Pennsylvania<sup>5</sup> (*Table 3*). Commonest in an early phase is the type of case, often having less than universal involvement, whose symptoms occur in distinct episodes lasting several weeks at a time. These seem then to remit, often without apparent influence by therapy, only to relapse again after a symptom-free period of several months. In this interval, the patient may feel quite well, gain weight, and have formed bowel movements.

This symptomatic pattern may continue, or may eventually progress into the chronic, continuous variety. This transition occurs when an attack indistinguishable from previously experienced ones now fails to remit; thus the usual duration of several weeks extends into several months. After six months, Bockus feels that transition to the chronic continuous type has occurred.

This clinical type is characterized by daily evacuations of liquid, usually bloody, stools numbering from six to twenty in 24 hours. The patients may be chronically anorexic and underweight, or at times may feel quite well and even be obese. They are, of course, plagued by the nuisance of frequent trips to the toilet for the evacuation of feces, mucus and gas. These often interfere with sleep by waking the patient during the night and before his regular waking hour in the morning.

More important than the nuisance is the increasing incidence of neoplastic change in the inflamed colon as the disease continues. The type of adenocarcinoma associated with ulcerative colitis has proved highly invasive and unusually difficult to diagnose

at an early stage. Moreover, the chronic continuous type is associated with certain systemic complications such as liver disease, arthritis, and skin disorders.

The most dramatic type of ulcerative colitis occurs when the initial attack is so severe that it progresses to the life-threatening, acute fulminating variety. This is characterized by toxemia with high fever, nutritional and electrolyte depletion, debility and weight loss, hemorrhage and anemia, and abdominal distention and ileus despite diarrhea. This later syndrome is apparently unique to ulcerative colitis, and it has been termed "toxic megacolon."<sup>6</sup> The important facet of this condition is its tendency to proceed, especially under the falsely reassuring influence of steroid therapy, to perforation before operative excision can be performed.

## Case Reports

The preceding sections allow some insight into the general clinical and pathologic categories dealt with in the management of ulcerative colitis, but classification is at times of limited help in solving the agonizing problems one encounters in dealing with individual patients. The next section illustrates four dramatic examples of the 25 cases in the author's series in which surgery has been performed for their disease.

## CASE 1

Ruth K. was a 17-year-old high school senior when brought to my office by an older sister in August 1966. Occasional episodes of diarrhea and crampy abdominal pain had begun at age 11, but barium enema at that time showed no clear-cut changes in the colon. Three years later, when she first consulted the referring physician because of having six liquid stools daily, the diagnosis was clarified when the barium enema showed universal involvement by typical ulcerative colitis. Salicylazosulfapyridine (Azulfidine) was prescribed, but her symptoms persisted. Yet, she ate well, had no pain,

TABLE 2

(Illustrates degrees of involvement of colon by idiopathic ulcerative colitis when patient is first encountered.)

## IDIOPATHIC ULCERATIVE COLITIS

*Extent of Involvement When First Seen*

- A. Rectum or rectosigmoid
- B. Progressing orad (e.g. left colon)
- C. "Universal" (entire colon)
- D. "Universal" plus "backwash" ileitis



TABLE 3

(Bockus' classification of clinical varieties of idiopathic ulcerative colitis, pertaining to activity and constancy of symptoms.)

IDIOPATHIC ULCERATIVE COLITIS

*Clinical Syndromes*

- A. Remitting relapsing type
- B. Chronic continuous type
- C. Acute fulminating type

and weighed 130 pounds at five feet, eight inches. One month prior to seeing me in July 1966, she had consulted a nearby medical center for acne, and in the course of a workup had her third barium enema, after which subtotal colectomy was recommended. This idea so upset the mother of the patient that she required psychiatric hospitalization.

My physical examination was unremarkable, though sigmoidoscopy showed a scarred mucosa. Review of the previous x-rays showed definite progression over six years in the shortening and deformity of the colon.

Over the next three years this patient was seen by me at intervals with dramatic episodes consisting of apparent epidemic vomiting associated with exacerbation of her diarrhea. These required hospitalization for intravenous fluids and rest. She entered college for a semester or two, but then began planning for marriage. In July 1969, she brought her fiance into the office and we discussed her disease. She ignored my advice to have sigmoidoscopy and barium enema in August before her planned wedding date in October, and I next encountered her in the hospital emergency room in mid-December. This particular episode of nausea, fever and increased diarrhea was much like her previous ones save for increased tenderness in the abdomen. The white blood count was 16,000 with 35 segmented, and 23 bands, and fever occurred daily to 101F. The barium enema showed still further shortening of the colon. When an exudative pharyngitis developed during the hospital course, penicillin was begun, but the culture showed *Monilia*, and the throat responded to Mycostatin oral solution. ACTH was given when her fever persisted and she improved clinically, but the white count continued to rise, measuring 42,000 after ten days. I then advised colectomy, which was elected after several interviews with an impetuous young husband.

One week later in January 1970, total colectomy was accomplished with removal of the rectum and resection of 18 inches of terminal ileum. The pathologic report was subacute ulcerative colitis and ileitis,

involving all but the most proximal four centimeters of the resected specimen. Post-operatively the patient had a urinary tract infection and some difficulty in adjusting to her ileostomy, but left the hospital on the seventeenth postoperative day, doing reasonably well.

Regular follow-up visits at three month intervals to the patient's surgeon have revealed a well-functioning ileostomy in this first postoperative year. She desires a pregnancy, and her surgeon has promised an obstetric referral soon. I met the young lady at a holiday party in December 1970, and she was so changed that I did not recognize her. She had gained weight and really looked quite glamorous, a marked change from her last hospitalization. Since this time she has been seen in my office and appears to be functioning quite well in her role as a housewife.

COMMENT

R. K. with her six liquid stools daily before surgery illustrates the chronic continuous variety of ulcerative colitis, and her indication for surgery would best be termed intractability. The eight-year course of her disease also places her on the borderline of that arbitrary designation of over ten years' duration in which carcinoma is said to become a much more frequent complication of idiopathic ulcerative colitis when there is universal involvement of the organ.<sup>7</sup>

CASE 2

David R. was an active 33-year-old Methodist clergyman in a rural Kansas community when referred to me in January 1966. His 15-year history of ulcerative colitis had begun when he was a high school student. Symptoms had gradually become chronic and continuous, but had not prevented his professional career despite five to ten stools daily, associated with abdominal cramping, and often containing blood.

The first x-ray done by the referring physician was in February 1965, eleven months before referral. It showed marked shortening of the entire colon thought typical of ulcerative colitis. Recently he had been hospitalized for thrombophlebitis of the left lower extremity but also gave a history of weight loss, increased fatigue, and increased diarrhea attributed to the busy church calendar surrounding the Christmas season. Barium enema at this time, however, showed an annular defect in the descending colon and he was transferred to a Wichita hospital.

On physical examination a definite left lower quadrant mass was palpable. He had lost 16 pounds, and appeared pale and chronically ill. Sigmoidoscopy showed the typical appearance of ulcerative colitis. X-rays showed a ragged, moth-eaten appearance of the entire colon and terminal ileum suggesting pseudopolypoidosis along with a constant constricting

defect in the mid-descending colon suspicious of carcinoma. At surgery the patient was found to have spread of adenocarcinoma to the omentum and peritoneum with involvement of lymph nodes. Transverse colostomy was performed because of impending obstruction. He recovered from surgery and was given several courses of 5-Fluorouracil. He continued active in the ministry until a few weeks prior to his death in August 1966, slightly more than six months after his surgery.

#### COMMENT

The untimely death of D. R. certainly illustrates the most tragic sequel of long-standing ulcerative colitis. It should be emphasized that there was no clear-cut indication of the development of his malignancy until it had progressed to an incurable stage. Surgery for his intractable disease would have had to have been done prophylactically were his life to have been saved. This indication for colectomy is a difficult one for a patient to accept when he is functioning reasonably well, as was this busy and successful clergyman.

#### CASE 3

Mary H., a 17-year-old high school senior, developed her first diarrhea in March 1968 after returning from a skiing trip to Colorado. Another student on the same trip had similar symptoms transiently, but those of the patient failed to improve and she began to lose weight, became anorexic and finally in May was having ten to twelve liquid bloody stools per day. Stools for ova and parasites were negative as was a colon x-ray done as an outpatient two months after the onset. However, ten days later a fever of 103°F led to her hospital admission. Sigmoidoscopy showed a typical mucosal appearance of ulcerative colitis. Biopsy was done and was confirmatory. She was thought too ill to repeat the barium enema.

Placed on Azulfidine and ACTH, she became afebrile, but remained weak, faint, and demonstrated tachycardia and leukocytosis with a marked shift to the left. Frequent bloody rectal discharges persisted and finally a massive hemorrhage on June 7 produced hypotension and required four units of blood over the next several hours. The subject of colectomy was first discussed at this time with the very anxious and solicitous parents of this only child, but the idea was unacceptable to them. Over the next two or three weeks she continued to lose weight, and began to demonstrate a tendency to ileus despite the frequent rectal evacuations. Laboratory studies revealed continued anemia, and depletion of her serum proteins was marked. Flat x-ray of the abdomen showed marked dilatation of the transverse colon compatible with the toxic megacolon syndrome.

Finally, proctocolectomy with ileostomy was performed on June 27, one month after admission, with the expected findings of universal involvement of the markedly distended colon. Fecal stained material in the left gutter was thought evidence of previous perforation, and her postoperative course was somewhat stormy with melena appearing through her ileostomy on the eleventh postoperative day. Steroids were rather rapidly decreased at this point, and except for a mild depressive reaction and some daily fever attributed to her perineal wound, she made steady progress. Dismissal to her home occurred one month to the day after her surgery and only four months after the onset of her disease symptoms.

The patient surprised her parents and her physicians by insisting upon carrying through her previous plans to enter a local university in the regular fall term, less than six weeks after leaving the hospital. She joined a sorority and that next spring appeared in their chorus line at the annual "Greek Week" dramatic festival. In June she resumed her previous summer job as a life guard at the swimming pool near her home. Presently, at age 20, she is classified as a junior student, having carried a normal college load the past two years. She remains rather anxious, but requires no medicine and denies any problems in the care of her ileostomy.

#### COMMENT

M. H. presents as gratifying a result as that of D. R. was tragic. It almost seems that she was fortunate to have had so fulminating a course that approval of colectomy was forced on parents who otherwise would have been unable to consider it. The presence of a minor perforation at operation serves to emphasize the gravity of the situation, and reminds that her youth and good health prior to the short but devastating illness may have been the most important factors in her survival.

#### CASE 4

Charlie B., a 63-year-old retired school custodian from Texas, was hospitalized with bloody diarrhea while spending the Christmas holidays in Wichita in 1969. He had given up his work two years earlier because of chronic rheumatoid arthritis and heart disease. Shortly after retirement he noted diarrhea and was diagnosed as having ulcerative colitis. A course of Azulfidine produced complete remission of symptoms. His first bloody diarrhea occurred a year later and about nine months prior to admission. Azulfidine again produced relief but when the same sequence of events occurred in November 1969, he developed angioedema due to the sulfa derivative. After it was discontinued his condition deteriorated, becoming dramatically worse after his arrival at the home of his daughter in Wichita.



Thus, he came to the hospital on December 28, following a 20 pound weight loss in two months. Bloody diarrhea, consisting of six stools during the day and three or four nocturnally, had been experienced during this time. Admission white count showed a marked shift to the left without leukocytosis. A typical acute, diffuse, ulcerative colitis was revealed at sigmoidoscopy. The barium enema, though not entirely satisfactory, was not obviously abnormal. No relief was produced by the administration of oral prednisone and I first saw the patient in consultation about four weeks after admission. He was unable to retain rectal instillations of hydrocortisone, and finally parenteral ACTH was instituted along with amitriptyline HCL (Elavil), the latter for depression and anxiety.

About this time the patient began to complain of abdominal fullness despite up to 30 rectal discharges in 24 hours, and on February 2, his abdomen appeared strikingly protuberant. Scout film showed a considerably distended transverse colon along with dilatation of loops of small bowel. A further shift to the left of the white count along with toxic granulation of the polys was noted. On February 5, the distention was increased in the transverse colon, and surgical decompression was advised. Exploration revealed a dilated transverse colon with a diameter of 15 centimeters. The bowel was markedly friable, and perforation became apparent during the procedure. Consequently, only a first stage colectomy and ileostomy with formation of a mucous fistula in the sigmoid was accomplished. Pathologic report of the colon showed the ulcerations penetrating from the mucosa deeply into the serosa with fibrinous exudate present on the serosal surface. Septic complications attributed to gram-negative organisms occurred following surgery and the patient failed to respond to massive antibiotic therapy. Finally he developed hypotension, renal shut down and died on February 26 after a two month hospital course.

#### COMMENT

The case of C. B. illustrates that ulcerative colitis is not necessarily an easily managed disease when it appears in the elderly, as was once believed.<sup>8</sup> This man's lack of the natural assets of youth and general good health, rather than acting as a deterrent to surgery, should have influenced us toward it earlier since he had failed his trial of medical therapy some time before the perforation occurred. How could the invaluable role of the surgical treatment of idiopathic ulcerative colitis be any more effectively illustrated than by the events which befell this man?

#### Discussion

These four cases establish that neither duration of the disease nor age of the patient provides a key to

the type of management needed by an individual afflicted with ulcerative colitis. However, it can be safely presumed that any form of the disease involving all of the colon threatens the life of the patient. The conveyance of this fact to the colitis patient and his family requires extreme diplomacy and tact and truly serves as a test of one's ability to practice the "art of medicine"! The major stumbling block to their acceptance of the precarious nature of their problem is the irrevocable alternative of the cure. I refer to amputation of the colon and rectum with its associated loss of bowel continence. Although reports recommending ileorectostomy appear from time to time in the medical literature,<sup>9</sup> the likely need for later removal of the diseased rectum has prevented its widespread utilization.

My technique in the regular follow-up office call of the patient with ulcerative colitis has consisted of a two-step procedure:

1. Examination of the rectal mucosa with the four inch Boehm proctoscope, inserted with the patient lying on the regular examining table in the left lateral position. This requires no preparation and produces minimal discomfort.

2. Frank discussion (often with a parent accompanying the younger patient) of the natural history and prognosis of the disease so that eventually the realization may come that there are worse fates than adaptation to an ileostomy bag.

It has been found unnecessary to do routine follow-up barium enema examinations of the colon. Usually performed in an attempt to detect early carcinoma, the radiologic study more often flares up the disease than it discovers new pathology, and in my opinion should be limited to infrequent intervals unless the symptom complex changes. Especially is this true in the first ten years of colitis when neoplastic development is rare.

On the other hand, the type of syndrome encountered in the hospital patient with acute fulminating disease requires aggressive management and the willingness to acknowledge medical failure at the crucial point in the patient's illness. At the fourth World Gastroenterologic Congress held in July 1970 in Copenhagen, Dr. Stanley Truelove of Oxford, England (who acted as moderator for a panel on ulcerative colitis) proposed the rule of thumb that no more than four or five days of intensive medical treatment should be allowed to pass unless marked improvement occurs in a severely ill patient with the disease. By early surgical intervention, his group has reduced the death rate of these severely ill cases from about 20 per cent to 4 per cent, which is the mortality of proctocolectomy itself.<sup>10</sup>

Of course, one must acknowledge that removal of the terminal four or five feet of the gastrointestinal tract drastically alters the future existence of its re-

cient. It should be noted, however, that most of the significant complications of ileostomy, including "dysfunction" with fluid and electrolyte depletion, prolapse of the stoma, skin breakdown and recurrent small intestinal obstruction occur within the first few months after operation. Once the first year has passed the complications are rare.<sup>7</sup> One should also consider the less serious, but nevertheless socially significant discomforts and inconveniences of the new anatomical arrangement. These include adjustments to diet, deodorants and ileostomy bags.

"Life with an ileostomy," while an intensely personal experience, nevertheless has provided a challenge worthy of team effort. "Ileostomy clubs" now flourish in many cities. Here "ileostomates" (as they call themselves) gather to pool information about techniques of ileostomy management and to boost each other's morale during the trying days when complications occur. Another club activity is hospital visitation of ileostomy candidates. Here these laymen, who have "been down the same road," prove by their willingness to share their own experience with a fellow sufferer that colectomy can be the dawn of a new existence rather than the end of all hope.

The Wichita Colostomy and Ileostomy Club, founded in 1957, now has 125 dues paying members from the South Central Kansas area, while the current mailing list for their bulletin numbers 350. National organizations with similar purposes exist in both Britain and the United States. These publish pamphlets and magazines featuring articles dealing with practical problems of the "stomate," as well as illustrations emphasizing their accomplishments.

New in the field of the stoma management is the development of the enterostomal therapist. This term designates a nurse or technician especially trained to deal with the problems of patients with an ileostomy, colostomy or ileal bladder. A medical community with a large caseload of this type should consider sending an individual for such training.

There are several locations in the eastern part of the United States where a six week course is presently available.<sup>11</sup>

## References

- 1a. Lockhart-Mummery, H. E. and Morson, B. C.: Crohn's disease of the large intestine. *Gut* 5:493-509, December 1964.
- 1b. Marshak, R. H. and Lindner, A. E.: Ulcerative and granulomatous colitis. *J. Mount Sinai Hosp.* 33:444-502, November-December 1966.
- 1c. Crohn, B. B. and Yarnis, H.: Granulomatous colitis: An attempt at clarification. *J. Mount Sinai Hosp.* 33:503-513, November-December 1966.
- 1d. Glotzer, D. J., Gardner, R. C., Goldman, H., Hinrichs, H. R., Rosen, H. and Zetzel, L.: Comparative features and course of ulcerative and granulomatous colitis. *New Eng. J. Med.* 282:582-587, March 12, 1970.
2. Bagen, J. A.: Personal communication.
3. Taylor, K.: Remarks made in a panel on colitis at annual meeting of American College of Physicians, April 1967.
4. Nugent, F. E., Veidenheimer, M. C., Zuberi, S., Garabedian, M. and Parikh, N. E.: The clinical course of ulcerative proctosigmoiditis. *Amer. J. Dig. Dis.* 15:321-326, April 1970.
5. Bockus, H. L., Roth, J. L. A., Buchman, E. and Kalser, M.: Life history of nonspecific ulcerative colitis: relation of prognosis to anatomical and clinical varieties. *Gastroenterologia* 86:549, 1956.
6. Tumen, H. J.: Toxic megacolon in fulminating disease. *JAMA* 191:838-842, March 8, 1965.
7. Devroede, G. J., Taylor, W. F., Sauer, W. G., Jackman, R. J. and Stickler, G. B.: Cancer risk and life expectancy of children with ulcerative colitis. *New Eng. J. Med.* 285:17-21, July 1, 1971.
- 8a. Bagen, J. A.: Present-day therapy of thrombocytopenic (streptococcal) colitis. *M. Clin. North America* 32: 967-979, July 1948.
- 8b. Bassler, A.: Etiology and treatment of chronic ulcerative colitis (non-specific). *Rhode Island M.J.* 31:663-668, November 1948.
9. Aylett, S. O.: Conservative surgery in the treatment of ulcerative colitis. *Brit. M.J.* 2:1348-1351, December 19, 1953.
10. Truelove, S. C.: Remarks made as moderator of a symposium: Ulcerative colitis and Crohn's disease, 4th World Gastroenterological Congress, Copenhagen, Denmark, July 15, 1970.
11. Lenneberg, Edith: The role of enterostomal therapists and rehabilitation clinics. Presented at National Conference on Cancer of the Colon and Rectum, San Diego, California, January 9, 1971.



# Benign Lesions

## Leiomyomata of the Gastrointestinal Tract

FRANCES ANN ALLEN, M.D., F.A.C.P., *Newton*

LEIOMYOMATA (smooth muscle tumors) make up one per cent of all gastrointestinal neoplasms. They appear in all age groups, from infancy to old age. They are more common in some parts of the tract than others, being most common in the stomach. Incidence is as follows in 513 cases:

	No. of Cases	Per Cent
Esophagus .....	50	10
Stomach .....	321	63
Small intestine .....	109	21
Colon .....	33	6

One should include these tumors in the differential diagnosis of all disease of the gastrointestinal tract involving bleeding (acute or chronic), obstruction, pain, dyspepsia, and, rarely, stomach or bowel perforation. They can be life threatening or a mere incidental finding. Occasionally, a patient is refused surgery, assuming this benign lesion to be malignant and, because of its large size, inoperable. Also occasionally, a patient is subjected to an unjustifiably radical procedure, assuming it to be malignant when it is benign. For these reasons, one should re-admit this disease to the differential diagnosis of gastrointestinal disease. Thoughtful inclusion, preoperatively, can result in a more appropriate treatment plan, if and when the tumor is encountered.

The microscopic pathology of these tumors is familiar to all, most frequently in the form of the common uterine fibroid. However, there are some variations of note—particularly in gastric lesions. Welsh and Meyer<sup>1</sup> have performed studies of "ultrastructure" in these tumors and note a "dedifferentiation tendency" with "newly coated vesicles" and "ciliary" development which they relate to potential malignancy.

Humoral pathology has been reported by Fried, Word, and Hopeman,<sup>2</sup> who described an esophageal leiomyoma, which secreted a substance that stimulated the production of erythropoietin from the kidney, resulting in polycythemia. This has been noted in uterine leiomyomata also.

A "bizarre" leiomyoma has been described by

Stout<sup>3</sup> in 1962 and by Xipell<sup>4</sup> in 1970. It is characterized by a polyhedral type cell with bizarre cytoplasmic staining characteristics and zones of palisading. Most important of all, a lack of encapsulation, with tendency to invade adjacent muscularis, is noted. It occasionally will metastasize.

**This presentation has given a general description of the incidence, pathology, differential diagnosis, symptoms, diagnostic procedures, and treatment of leiomyomata of the gastrointestinal tract.**

**Cases of esophageal, gastric, small bowel and rectal leiomyomata have been described and illustrated.**

**It is urged that this benign tumor be more frequently considered in the differential diagnosis of diseases of the gastrointestinal tract, presenting with bleeding (acute or chronic), obstruction, pain, the feeling of a mass, or x-ray defect.**

Grossly, however, most leiomyomatous tumors present as a rounded, broad based, smooth, submucosal mass with a tendency to ulcerate and bleed. They may asymptotically attain great size (3 to 4 Kilos), or be symptomatic when less than 3 centimeters in diameter, depending upon location and proximity to a narrow segment of the gastrointestinal tract. They may be intraluminal or extraluminal.

Differential diagnosis must include:

- 1. Malignant tumors;
- 2. Other types of benign neoplasms; and
- 3. Non-neoplastic disease.

Of the *malignant tumors*, one includes:

- Leiomyosarcoma (seldom less than 3 centimeters in diameter.)
- Carcinoma
- Lymphomata, such as:
  - Reticulum cell sarcoma
  - Lymphosarcoma
  - Hodgkin's disease
  - Leukemia

Presented at the annual meeting of the Kansas Chapter, American College of Physicians, Overland Park, Kansas, February 19, 1971.

Benign tumors to be considered are:

- Polyps of all types
- Neurofibroma
- Adenomyoma
- Neuroma
- Angioma
- Lipoma
- Aberrant pancreas
- Carcinoid tumor

Non-neoplastic diseases to be included are:

- Simple ulcer (non-specific)
- Peptic ulcer
- Regional enteritis
- Intussusception of Meckel's and other diverticula
- Aorto-enteric fistula (with massive hemorrhage)

Treatment is universally surgical; however, the type of surgery may vary with the location and size of the tumor. Preoperative diagnosis and careful preparation of the patient may change the surgical procedure done. Frozen section is desirable at the time of surgery as a guide to the type of operation.

Incidence, symptoms, diagnosis, and treatment for leiomyomata of the various anatomical levels of the gastrointestinal tract follow.

### Esophageal Leiomyoma

#### INCIDENCE

Leiomyoma is the most common benign tumor of the esophagus, making up 77 per cent of the total. It may be mucosal or extramucosal in origin and location. Forty-six per cent are in the upper third, 35 per cent in mid-third, 9 per cent in lower third, and 8 per cent at the esophagogastric junction. Figures vary, some stating they are more common in the lower third.

#### SYMPTOMS

Two-thirds may give no symptoms and are incidental findings. One-third are symptomatic, these symptoms being (1) obstruction with dysphagia; (2) regurgitation of food with or without food overflow into the larynx, and cough; (3) substernal pain; (4) melena; (5) hematemesis; and (6) bronchial obstruction if the tumor is very large and in the middle or upper one-third of esophagus.

#### DIAGNOSIS

There are usually no positive physical findings. X-ray often shows a filling defect, and fluoroscopy shows split barium stream and smooth rounded cuffing sign of intraluminal mass. Esophagoscopy with biopsy is definitive. It must be differentiated from carcinoma and benign tumors of other types.

#### TREATMENT

Surgery is the only feasible approach. It may consist of:

1. Enucleation (preferred).

2. Excision of tumor with esophageal wall.
3. Resection of esophagus and reanastomosis.

### Gastric Leiomyoma

#### INCIDENCE

Some investigators state this is the commonest tumor of the stomach. Meissner<sup>5</sup> states that careful search will reveal leiomyomata in more than half of all stomachs examined. Ackerman and Stout<sup>6</sup> found 23 per cent incidence in 1,000 consecutive autopsies. Incidence varies with the enthusiasm of the examiner. In the experience of most doctors, benign polyps outnumber leiomyomata clinically.

The tumor may be endogastric, intramural or exogastric. They are less well encapsulated than similar tumors in other parts of the gastrointestinal tract and show greater microscopic dedifferentiation. For these reasons, it is thought they have a greater potential for malignancy.

#### SYMPTOMS

Most patients give no symptoms. When symptoms are present:

- 50 per cent will have pain;
- 50 per cent will have "indigestion";
- 27 per cent will bleed chronically with iron deficiency anemia, or acutely with hematemesis or melena.

Obstruction occurs if the tumor is at the gastro-esophageal junction, at the pylorus, or pedunculated in the antrum and prolapsing onto the pylorus.

#### DIAGNOSIS

*Physical examination* is usually unrevealing unless the tumor is very large and, therefore, palpable. Pallor is associated with anemia.

*X-ray* shows a gastric filling defect, often with a punctum.

*Gastroscopy*, with or without biopsy, is usually definitive. Incidence of location is:

- 40 per cent in pars media;
- 25 per cent in antrum;
- 60 per cent on lesser curvature;
- 66 per cent on posterior wall;
- 60 per cent submucosal;
- 30 per cent subserosal.

#### TREATMENT

Wide surgical excision (due to non-encapsulation) is the treatment of choice with appropriate surgical procedure being dependent on the part of the stomach occupied by the tumor.

### Small Bowel Leiomyoma

#### INCIDENCE

One and seven-tenths per cent of all gastrointestinal tumors are small bowel tumors (Good-1963).<sup>7</sup> The most common benign neoplasms in the small bowel are carcinoid tumors. None of these bleed.



The actual incidence of leiomyomata is obscure because they are silent unless they bleed, obstruct, or intussuscept. Of 58 cases of small bowel hemorrhage, 28 were due to leiomyoma, according to Netterville, Hardy and Martin.<sup>8</sup> The tumor may be intraluminal or extraluminal.

#### SYMPTOMS

Small bowel obstruction.  
Small bowel hemorrhage.  
*Rarely* perforation.

#### DIAGNOSIS

In the silent bleeding patient, diagnosis is sometimes *very* difficult.

Small bowel gas pattern of obstruction may be seen by scout films. Fluoroscopy and x-ray with barium or lipiodol shows obstruction at times.

Laboratory tests might show gross or occult blood in the stool, with anemia; otherwise, nothing.

Einhorn or Fluorescin string is sometimes helpful. At laparotomy, if the tumor is not palpable, transillumination of the small bowel and aspiration of bowel content at various levels looking for blood, may be necessary. Radioactive chromium with Geiger probe counter for the site of bleeding will sometimes help locate the bleeding lesion.

Superior mesenteric artery arteriography, to outline the tumor and find the site of bleeding, is described as helpful. Endoscopic examination, through multiple enterostomies, is sometimes necessary to find the bleeding site.

#### TREATMENT

Surgical resection of the involved intestinal segment with primary anastomosis is the only rational approach.

### Leiomyoma of Colon and Rectum

#### INCIDENCE

These are rare. In 1968, Khanna, *et al.*,<sup>9</sup> stated only 40 cases (including leiomyosarcoma) had been described in the colon. MacKenzie<sup>10</sup> collected 24 benign leiomyomas. There are four types: intracolic, extracolic, dumbbell type, and constrictive.

Two-thirds extended into the lumen of the colon and half of these produced intussusception (intracolic).

They appear as small submucosal nodules in the rectum. Extracolic and dumbbell types may form cavities which communicate by fistula with the bowel lumen.

#### SYMPTOMS

Symptoms of leiomyomata in the colon may be:

1. Asymptomatic or *none*.

2. Pain, distention, rectal bleeding, melena, mucus, loose stools, and bladder symptoms. Intussusception is common.

3. Rectal symptoms are local discomfort, bleeding, etc. Local bladder pressure, at times, occurs if the growth impinges on the bladder.

#### DIAGNOSIS

Fluoroscopy and x-ray may show the lesions, especially if it is above the proctosigmoidoscopic level.

Direct visualization and biopsy through the rectum is definitive when the lesion is within the reach of the examining instrument. Smooth rounded tumors seen by x-ray are difficult to differentiate from polyps and carcinoma.

#### TREATMENT

Surgery is the only treatment, the type of procedure depending on the level of the lesion.

1. Colon—Resection (non-radical).
2. Rectum—Enucleation, if possible; occasional abdominoperineal resection if large, obstructive, and non-resectable by other means.

### Case Abstracts

#### ESOPHAGUS (Case 1)

E.M.J.—a 52-year-old female nurses' aide was admitted to Bethel Deaconess Hospital with an anxiety reaction. She had a history of gastric ulcer in 1965. It was visualized gastroscopically at that time and was thought to be benign. She bled, but was treated medically. At the time of the present admission, she was found to have a large gastric ulcer by x-ray. She had anemia with iron deficiency. Gastric analysis showed no free hydrochloric acid in the fasting and 15-minute specimens. Maximal secretion was 30 cubic centimeters at 45 minutes, with free acid of 47 degrees. Stools were positive for occult blood. Gastroscopic camera examination showed an ulcer on the greater curvature side of the antrum. It appeared sufficiently large, deep and with rolled edges so that malignancy could not be excluded.

X-ray of the esophagus—in retrospect showed a defect (*Figure 1*). The defect was not recognized preoperatively, however.

*Surgical findings were:* Duodenal ulcer; large gastric ulcer, greater curvature (benign); incidental leiomyoma of distal esophagus, 4.5 × 2 centimeters in size.

*Procedure:* Vagotomy, hemigastrectomy, resection of leiomyoma of esophagus (enucleation).

Postoperative course was uneventful. Psychiatric consultation, with subsequent psychiatric therapy, was carried out.

This represents a totally asymptomatic lesion which was an incidental finding at the time of surgery for other disease. One might postulate that ulti-



Figure 1. In a 52-year-old female, this lower esophagus x-ray showed (in retrospect) a defect which proved to be a leiomyoma  $4.5 \times 2.0$  cm. in size. It was found at the time of vagotomy and hemigastrectomy for benign gastric and duodenal ulcer disease. Ultimately, it might have bled or obstructed the lower esophagus.

mately it might have obstructed the esophagus or bled.

#### STOMACH (Case 2)

M.C.F., an 82-year-old housewife, was admitted to the hospital with a complaint of weakness and shortness of breath of three weeks duration. Two years previously, she had fractured her left hip and was treated by replacement arthroplasty of the femoral head. At the time of the fracture, the hemoglobin was 12.5 grams and hematocrit 42 per cent. She had a small pulmonary embolism as a complication but recovered without major difficulty. With the present admission, the hemoglobin was 5.9 grams and hematocrit 19 per cent. She had noted black stools for the preceding two weeks. She denied digestive symptoms other than slight "indigestion." There was no vomiting. Physical examination showed only pallor and tachycardia. No masses could be felt.

Laboratory—serum iron, 52 mcg.; IBC, 193 mcg.;

normal serum proteins; stools—black and positive for blood.

X-ray showed a large tumor of the lesser curvature side in the mid-stomach (Figure 2). Gastroscopic camera examination revealed a large tumor

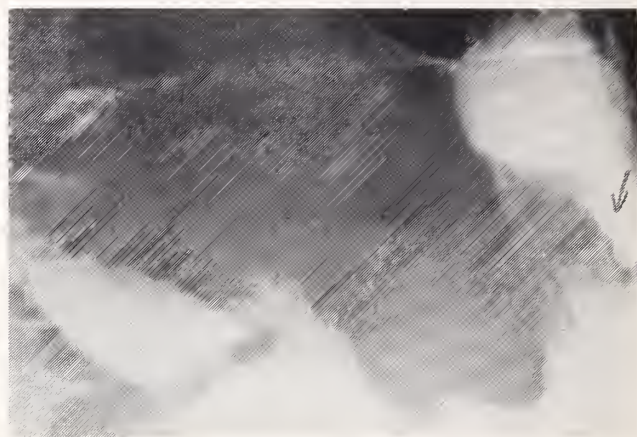


Figure 2. An 82-year-old housewife presented with dyspnea from profound anemia due to bleeding from the large gastric leiomyoma seen on this x-ray. The bleeding punctum is clearly visible.

with large punctum on the lesser curvature in mid-stomach (Figure 3).

*Surgical findings* were intraluminal tumor of the body of the stomach. A hemigastrectomy with Billroth I anastomosis was carried out. Convalescence was relatively uneventful.

*Pathology:*  $8 \times 9$  cm. tumor intramural, encapsulated, many nucleoli, no mitotic figures. Non-malignant leiomyoma of the stomach.

#### SMALL BOWEL (Case 3)

M.K., a 60-year-old male (lumber yard worker), was admitted to the hospital on two occasions. In May 1969, he was admitted with tarry, dark red, bloody stools and a hemoglobin of 8.9 grams. X-ray showed a hiatus hernia but no ulcer. No small bowel x-rays were taken. It was concluded by his physician that he had bled from his hiatus hernia. Colon x-ray showed diverticulosis. A proctosigmoidoscopy was negative. Attending physician's diagnosis was:

1. Anemia due to blood loss.
2. Hiatus hernia.
3. Diverticulosis of the colon.

He received two units of blood at the time of the first hospitalization. He was readmitted six months later by the same physician with massive upper gastrointestinal bleeding. The hemoglobin was 11.3 on admission and hematocrit was 32 per cent. It dropped to 2.9 grams with hematocrit of 11 per cent, in three days, in spite of five units of blood given. He was in shock. No x-rays were repeated. Four more units of blood were given and he was explored surgically.





Figure 3. Gastroscopic visualization of the  $8 \times 9$  cm. leiomyoma seen by x-ray in Figure 2. Excision resulted in cure. The large blood filled punctum is clearly visible.

Two tumors of the jejunum were found. One of them was intraluminal and  $6 \times 8$  millimeters in size. The other was  $2.5 \times 2.0$  centimeters and was also intraluminal in location. It was this tumor which was the site of hemorrhage. Microscopically, the pathologist found benign encapsulated leiomyomata.

#### RECTAL (Case 4)

C.G.F. is a 53-year-old, schizophrenic male; he lives in a "half-way house" (custodial care unit). Previously, he has been a nose-picker, having largely destroyed his alae nasi, now severely scarred in this area. He was hospitalized in August 1966, because of finding a growth in the rectum on routine physical examination. Previous examinations for three years had revealed perianal excoriations. Two years previously, a huge area of leukoplakia interspersed with bleeding areas was encountered. His physician thought there was evidence of "self-abuse" noted on the proctosigmoidoscopy to a depth of 15 centimeters. There was bleeding from the rectum and it was considered as ulcerative colitis (traumatic). He had

constant bleeding and no diarrhea. There was a moderate iron deficiency anemia. Two years later (1968), an examination revealed a "hard, necrotic, fixed lesion at 7 centimeters depth, where the previous mucosal abnormality had been seen. The clinical impression of his physician and surgical consultant was cancer of the rectum. X-rays showed a defect on the right side of the rectum (Figure 4). Multiple biopsies were done and the pathology report was "ulcer of the rectum."

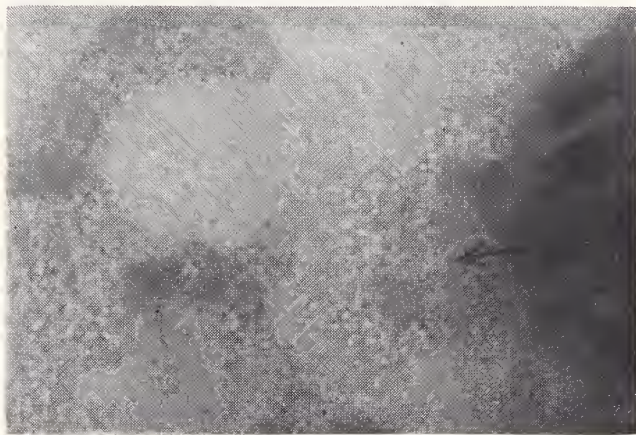


Figure 4. In a 53-year-old schizophrenic male, this large tumor of the rectum proved to be a leiomyoma rather than carcinoma. An abdominoperineal resection was performed.

An abdominoperineal resection with removal of 18 nodes was carried out.

Preoperative diagnosis—cancer of rectum (9 centimeters from anus).

Postoperative diagnosis—obstructive inflammatory mass of upper rectum.

Pathology: Leiomyoma of the rectum. All nodes negative for tumor.

#### References

1. Welsh, Ronald A. and Meyer, Adele T.: Ultrastructure of gastric leiomyoma. *Arch. Path.* 87:71-81, January 1969.
2. Fried, W., Ward, Harry P. and Hopeman, A. R.: Leiomyoma and erythrocytosis: A tumor producing a factor which increases erythropoietin production. Report of case. *Blood* 31:813-816, June 1968.
3. Stout, A. P.: *Cancer* 15:400, 1962.
4. Xipell, J. M.: Bizarre leiomyoma of the stomach. Case report. *Aust. N. Z. J. Surg.* 39:278-280, February 1970.
5. Meissner, W. A.: Leiomyoma of the stomach. *Arch. Pathology* 38:207, 1944.
6. Ackerman, L. V. and Stout, A. P.: Fascicle 21, Section VI, AFIP, Washington, D. C., p. 22, 1953; quoted by Crocker, D. W. *Annals of Surg.* 170:239-243, August 1969.
7. Good, C. A.: Tumors of the small intestine. *Amer. J. of Roentgenology* 89:685, 1963.
8. Netterville, R. E., Hardy, J. D. and Martin, R. S.: Small bowel hemorrhage. *Annals of Surg.* 167:949-957, June 1968.
9. Khanna, K. K., Chandra, R. K., Veliath, A. J., Kavaramma, B. and Upadhyaya, P.: Leiomyoma of the cecum. *Amer. J. Dis. Child.* 116:625-627, December 1968.
10. Mackenzie, D. A., McDonald, J. R. and Waugh, J. M.: Leiomyoma and leiomyosarcoma of the colon. *Ann. Surg.* 139:67-75, January 1954.

# Pulmonary Aspergillus Alveolitis

-A Case Report

JOHN K. FULTON, M.D., F.A.C.P., and HARRY LAZAR, M.D., Wichita

IN THE PAST, we have shared the view with others that human *Aspergillus* infection was a clinical rarity, mainly of pathological interest because of its appearance as an opportunistic infection in the late stages of advanced malignancy or other serious disease, or as a more or less harmless saprophyte accompanying other chronic lung disease, and occurring as the "fungus ball" occupying old tuberculous cavities. That it can and does exist as a primary invader in otherwise healthy lungs was not clear to us, though a subsequent search of the literature reveals that while rare, primary aspergillus pneumonia does occur and can constitute a serious clinical problem not amenable to surgical excision but perhaps treatable by appropriate chemotherapy.

The patient we will present exhibits features of both a hypersensitivity lung disease, analogous to farmer's lung, and features of an infectious and invasive lung disease. The classification of hypersensitivity lung diseases has been made as follows:

Presented at the annual meeting of the Kansas Chapter, American College of Physicians, Overland Park, Kansas, February 19, 1971.

We have a 17-year-old patient with lifelong atopy characterized by bronchial asthma and multiple immediate type skin reactions to extrinsic proteins, but with no known collateral disease, who developed primary invasive pulmonary aspergillosis associated with marked peripheral blood eosinophilia and exacerbation of the associated bronchial asthma. Treatment with amphotericin B on three occasions resulted in marked objective regression of the pulmonary lesions, but with recurrence eight months later following cessation of treatment. Accompanying the findings were a positive precipitin test for *Aspergillus fumigatus*, equivocal or negative titers for other fungi, positive skin wheal to aspergillus antigen, hyperglobulinemia, but minimal symptoms and no fever. Complete clearing occurred after a prolonged course of steroids.

TABLE 1  
TYPES OF PULMONARY HYPERSENSITIVITY DISEASE

A. Type I Reaction: Anaphylactic	Bronchial Asthma
B. Type III Reaction: Cytotoxic	Extrinsic Allergic Alveolitis
Examples: 1. Farmer's Lung	(Micropolyspora faenia)
	(Thermoactinomyces valgaris)
2. Aspergillosis	Bagassosis
3. Bird Breeder's Disease	Mushroom Worker's Lung
4. Others:	Suberosis (Moldy cork dust)
	Maple Bark Pneumonitis
	Pituitary Snuff-Taker's Lung
	Sequoiosis
	Malt-Worker's Lung
	New Guinea Lung
	Wheat Weevil Disease
C. Type IV Reactions: Delayed	Allergic Granulomatous Disease
Examples: 1. Allergy of Infection	(Tuberculosis, histo, cocci)
2. Berylliosis	
3. ? Pneumoconiosis (e.g. Silicosis)	
4. ? Sarcoidosis	



This classification is taken from Richerson who believes that type III, or immune complex, or Arthus reactions, in which vasculitis is a prominent pathological feature, is not known to occur in pulmonary hypersensitivity diseases.

Others, most notably Pepys, have suggested that since both type I, reaginic antibodies and type III, precipitin antibodies were demonstrable that both were involved in the pathologic changes seen. A classification based on this concept is seen in *Table 2*.

TABLE 2  
TYPES OF PULMONARY ASPERGILLOSIS

- |  |
|--|
| <p>A. Atopic</p> <ol style="list-style-type: none"> <li>1. Asthma—Type I</li> <li>2. I and III asthma and pulmonary eosinophilis or allergic bronchopulmonary aspergillosis</li> </ol> <p>B. Non-atopic</p> <ol style="list-style-type: none"> <li>3. Type III—extrinsic allergic alveolitis</li> <li>4. Pulmonary aspergilloma in cavities</li> <li>5. Invasive aspergillosis               <ol style="list-style-type: none"> <li>(a) Usually encountered in advanced malignancy, after use of immunosuppressives, etc.</li> <li>(b) Primary, without known immune deficiency</li> </ol> </li> </ol> |
|--|

Our subsequent remarks will have to do with allergic aspergillus alveolitis and its similarities to, and differences from, other pulmonary hypersensitivity pneumonias.

In one important particular, pulmonary aspergillosis differs from other hypersensitivity pneumonias in that in aspergillosis the organism grows and continues to exist in the lung as a source of antigen, whereas in the other hypersensitivity pneumonias such persistence is not required and usually does not occur. Pulmonary aspergillus pneumonia, therefore, has features of both an infection and a chronic hypersensitivity reaction.

Although much dispute exists within the literature as to the appropriate classification immune-wise of pulmonary allergic aspergillosis, all authors agree that both reagens and precipitins are necessary for the production of the syndrome of allergic alveolitis. Reagens account for the eosinophils, wheezing and immediate type skin reactions, whereas precipitins account for the pulmonary infiltrations, bronchial damage, and delayed type skin reactions.

Tissue sections (*Figures 1 and 2*) display an extensive but entirely non-specific cellular alveolar exudate accompanied by interstitial fibrosis. Chan Yeung and co-workers, in a recent report from British Columbia, commented on the lack of invasion of the bronchi and of the lung parenchyma,

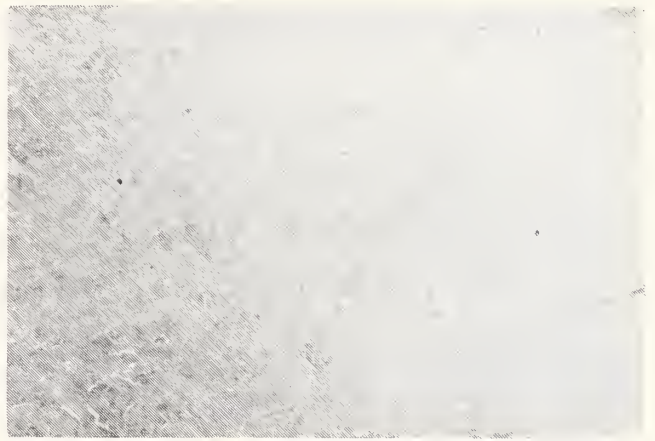


Figure 1

the scant evidence of vasculitis, and the mononuclear cell infiltration which suggested to them that a type III reaction was not present but that granulomata formation suggested a type IV, delayed hypersensitivity response. This type of change was not seen in our sections. It is worth noting that even with special stains, fungi were not demonstrable in the sections but grew out on culture.

As to treatment of pulmonary aspergillosis, a review of the literature reveals no general agreement. Systemic amphotericin B has been used, as in this case. Amphotericin by inhalation was used by Slavin. Ikemoto treated aspergillomas by intrabronchial instillation of amphotericin B following tracheal puncture. Nystatin by inhalation is said by Stark to achieve high tissue concentrations of this effective drug as well as measurable blood levels. Cortical steroids will reduce asthmatic symptoms, improve expectoration, and reduce infiltrations in patients who present with the picture of pulmonary eosinophilia with transient infiltrations. In addition, the reduction of bronchial mucus production appears to deny aspergillus a favorable culture medium and permit the infection to die out. Surgical removal of localized disease is not usually applicable to this syndrome as it may be to mycetoma. All authors agree that in

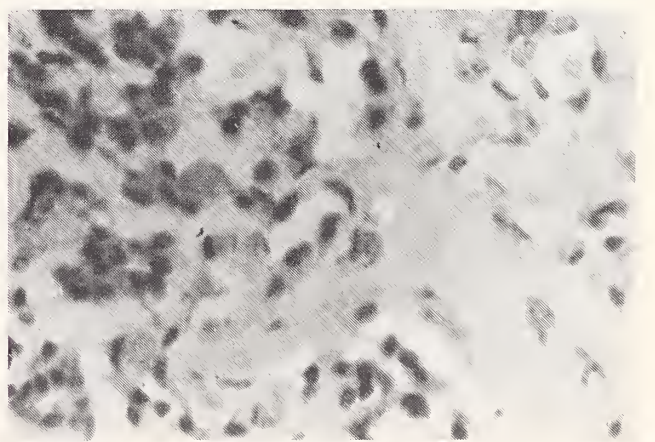


Figure 2



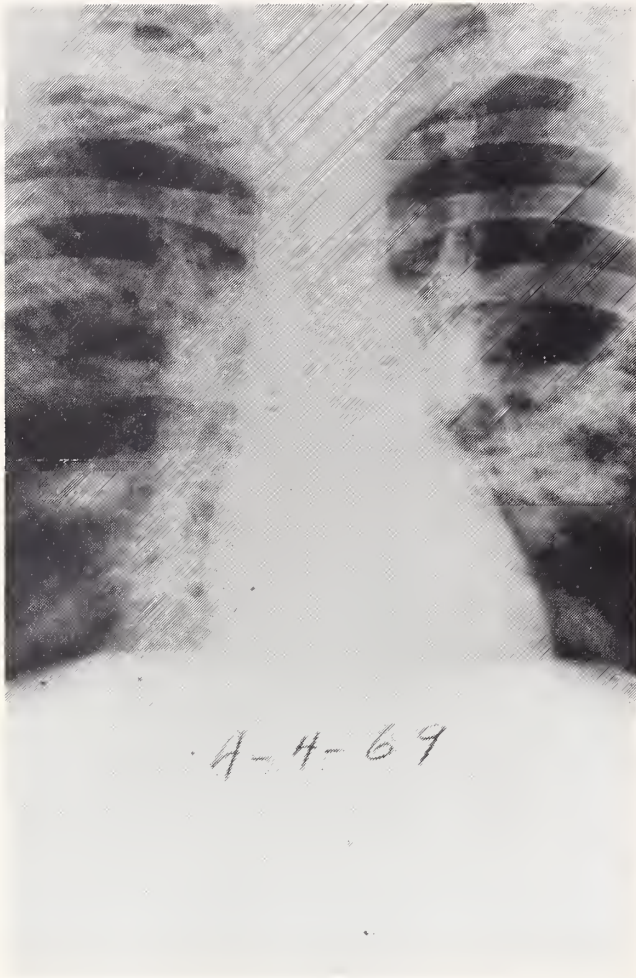


Figure 3

many cases, both hypersensitivity and infectious features must be taken into account. Our patient demonstrated a marked tendency to relapse after apparent improvement, suggesting that prolonged follow-up is needed. Although strong serological immune defenses do develop, they occasionally prove inadequate to cope with the infection, and marked bronchiectasis and interstitial fibrosis occur. The high incidence of this disease in previously atopic individuals indicates a special susceptibility in asthmatic patients to this complication.

Aspergillosis of the lung is distinctive from other hypersensitivity pneumonias in that the organism actually grows within the lung, probably occupying the bronchi where colonies persist and continue to provide an antigenic stimulus. In contrast, many of the other sensitivity pneumonias are due to inhalation of antigen which may produce an acute febrile pneumonitis usually quickly responsive to steroid therapy, or a more chronic interstitial pneumonia which is irreversible, but in either case there is no demonstrable growth of the offending fungus within the lung.

Furthermore, chronic aspergillus pneumonia produces in some instance a characteristic bronchiectasis

of the proximal segmental bronchi which is ultimately quite destructive.

### Case Report

The patient is a 17-year-old white male who had had bronchial asthma since early life and had been on hyposensitization treatment with extracts of pollens, molds, house dust and animal danders until April 4, 1969 when he was first seen because of a history of pains in the lower back and lower right chest, hemoptysis and increased wheezing. X-ray demonstrated bilateral pulmonary infiltrations (*Figure 3*) not present in 1965. Physical examination at this time demonstrated atopic rhinitis and slight harshness of the breath sounds but no wheezes or moist rales. The remainder of the examination was normal. Initial white blood cell count was 8,600 with 10 per cent eosinophils. A repeat count ten days later showed a similar 10 per cent eosinophilia (April 11, 1969). Serum protein electrophoresis showed a total protein of 9.2 gm, of which 32 per cent was gamma globulin with a polyclonal elevation. Routine chemical profile was normal. First and second strength PPD skin tests were negative as were his-

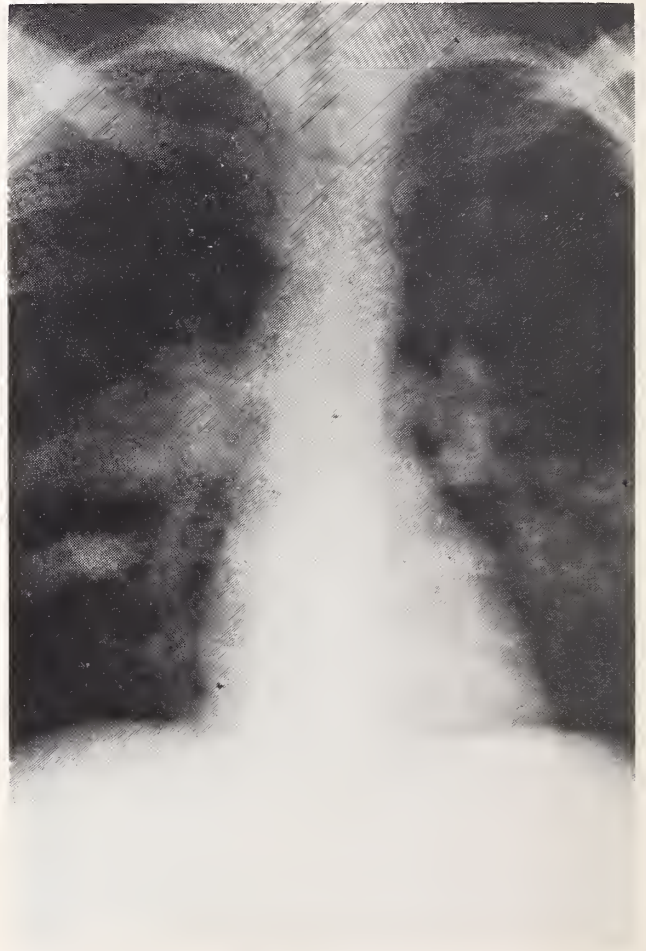


Figure 4



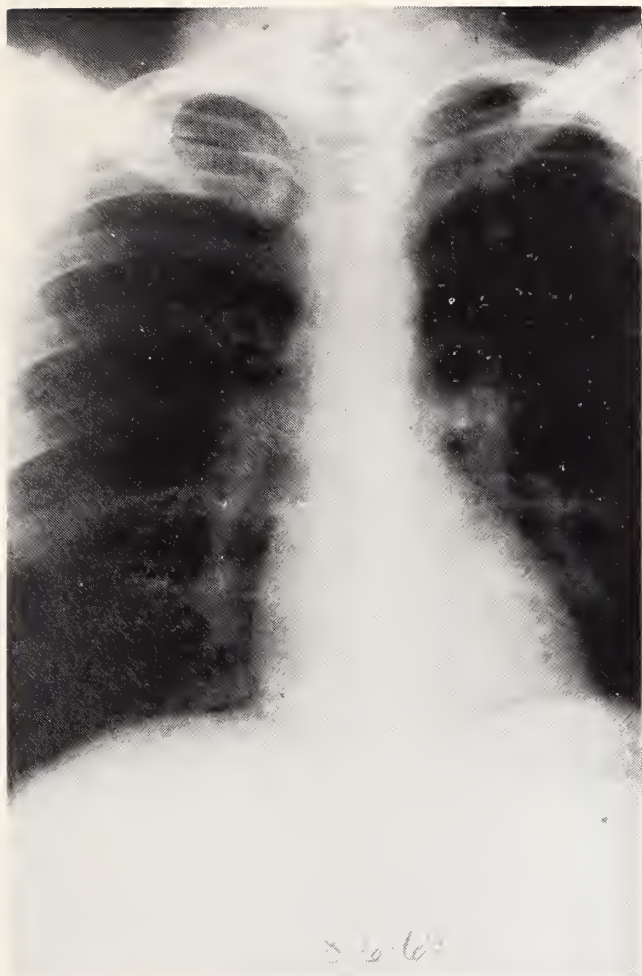


Figure 5

toplasmin and coccidioidin skin tests. A coagulase positive staph grew on routine culture.

The patient was initially treated with bronchodilators and expectorants and with oral erythromycin. He remained afebrile during subsequent weeks. X-rays taken 12 days after admission showed essentially no change. Spirograms showed evidence of expiratory delay and reduction in the maximum voluntary ventilation consistent with his known bronchial asthma. Numerous sputa for acid fast bacilli were negative. No fungi were seen on direct smear. A repeat blood count on April 29, 1969, 25 days after admission, revealed 30 per cent eosinophils in the peripheral blood; sedimentation rate was 18 mm; absolute eosinophils 2200/cu mm; stool was negative for ova or parasites; LE preparation was negative. Histoplasmosis complement fixations were negative to both yeast and mycelial phases. Blastomycosis was positive 1:32 and coccidiomycosis was negative at this time.

X-ray obtained on May 12, 1969 showed some apparent regression of the previous lung lesion, but follow-up on June 3, 1969 showed definite increase

in the infiltration. Films of June 16, 1969 (Figure 4) showed further definite progression of the previous infiltrate, and though no definite diagnosis had been made, amphotericin B was started on July 1, 1969.

On July 8, 1969 the first of several positive sputum cultures for *Aspergillus fumigatus* was obtained. The patient received a course of 1,075 mgm of amphotericin over a period of 23 days. During this treatment, remarkable clearing occurred as illustrated on the slide of August 6, 1969 (Figure 5). The gamma globulin declined to 24.28 per cent and the eosinophil count fell to 1 per cent, accompanied by significant improvement in his wheezing dyspnea. The patient then disappeared from observation until October 3, 1969 when he applied for employment, at which time a chest x-ray showed an increase in the perihilar infiltration at the left base, and the patient was readmitted for a second course of amphotericin. The gamma globulin had by then increased again to 30.64 per cent; the peripheral eosinophil count was 19 per cent of a total of 10,000 white blood cells; the sedimentation rate was 14 mm; the histoplasmosis complement fixation was negative; blastomycosis again positive 1:32 and coccidiomycosis negative. The patient received a total of 1,025 mgm of amphotericin B in a period of 23 days, following which there was again some regression, as seen on the films of October 10, 1969, and November 28, 1969.

He returned at that time for further treatment with amphotericin and was given a course of 850 mgm of amphotericin B in a period of 17 days, at which point the patient became recalcitrant and was discharged.

Serum obtained on November 26, 1969 was sent to Dr. Raymond G. Slavin, of St. Louis University, who reported strongly positive precipitating antibodies to *aspergillus fumigatus* on gel diffusion studies. Intracutaneous tests revealed immediate whealing reaction to *aspergillus* antigen. In July 1970, the patient came under observation again since he had developed hemoptysis, and x-rays again disclosed a bilateral extensive pulmonary infiltrate. He was studied in another hospital, at which time sputa were repeatedly negative for *aspergillus*, but thoracotomy and biopsy were done and cultures from the excised tissue grew *Aspergillus fumigatus*. Study of the tissue sections, including special stains, failed to demonstrate the fungus. The patient was subsequently transferred to the Kansas University Medical Center to the care of Dr. William Ruth where treatment with prednisone alone was administered. The patient was last seen on January 17, 1971 at which time he appeared clinically well.

# Pseudomonas Septicemia

## *Ecthyma Gangrenosum Successfully Treated With Gentamicin and Carbenicillin*

ROBERT W. WEBER, M.D., F.A.C.P., *Salina*

THE BACILLUS of blue-green pus was originally described by Gessard in 1882 and is now known as *Pseudomonas aeruginosa*.<sup>1</sup> Although the organism is widely distributed in nature and found on healthy skin and in the normal intestinal tract, it had not been considered a common pathogen until the last 30 years. During the last ten years *Pseudomonas* infections have challenged staphylococcal infections in importance. Since the advent of antibiotics, adrenocorticosteroids and cancer chemotherapeutic agents, infection with this organism has become increasingly common in hospitalized patients. Therapy has been difficult because the organism is resistant to many antibiotics.

The following case is presented because of successful treatment with carbenicillin, gentamicin and colistin, and because the infection was not associated with malignant disease and hospital exposure, but was probably related to phenylbutazone administration which has not been previously reported.

### Case Report

C. B., a 63-year-old farmer and oil field worker was admitted to Asbury Hospital August 23, 1970, because of leg ulcers and fever. He was transferred from the Russell City Hospital where he was initially confined on August 17. Small pyodermic abscesses developed on the left lower leg one week earlier and he received oral penicillin as an outpatient. The patient, however, became febrile and the lesions extended rapidly and involved both legs. Following hospitalization in Russell, he was treated with oral cloxacillin, 2 grams daily, and intramuscular cephalothin, 4 grams daily. A blood culture yielded *Pseudomonas aeruginosa* on the day of transfer.

The patient had been receiving phenylbutazone, 300 milligrams and indomethacin, 75 milligrams daily, for two months because of rheumatoid arthritis involving primarily the knees. Regular blood counts were reported normal. The past history was otherwise not significant and the patient had received no

other medications. A sister had died of a kidney tumor.

On admission to Asbury Hospital, the patient was acutely ill. Blood pressure was 130/70, respiration 28, pulse 100, and temperature 101 F. Rales were present in both lung bases. Bowel sounds were active; however, the abdomen was distended. There were pustular and vesicular lesions in the pubic area. These were erythematous with a raised margin and contained hemorrhagic exudate. Two necrotic gangrenous ulcers measuring 8 by 10 centimeters were over the right lower leg and a similar lesion was over the left tibia. Numerous smaller pustules and

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**A severely ill patient with skin lesions typical of ecthyma gangrenosum and *Pseudomonas septicemia* was treated successfully with colistin, gentamicin and carbenicillin. Azotemia, jaundice and heart failure complicated the clinical course. The absence of serious underlying disease was unusual and the only medication which possibly predisposed the patient to such an infection was phenylbutazone.**

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vesicular lesions ranging in diameter from 2 millimeters to 4 centimeters were present over both legs and a few small lesions were on the right forearm.

The urinalysis showed a trace of albumin. The hemoglobin was 11 grams per cent, the white count was 26,600, with 59 per cent segmented neutrophils, 31 per cent band forms, 3 per cent lymphocytes, 4 per cent myelocytes and 3 per cent metamyelocytes. The platelet count was 540,000. During the first two days in the hospital, the patient received two units of packed red blood cells. The white blood count increased to 46,000 with a marked left shift. The serum sodium decreased to 113 mEq. per liter on August 31. The blood urea increased from 24 milligrams per cent on admission to 70 milligrams per cent and the creatinine to 5.2 milligrams per cent on August 30. The serum bilirubin increased from 1.8 milligrams per cent to 13.8 milligrams per cent

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(direct 10.4 milligrams per cent). Protein and immunoglobulin electrophoretic patterns were normal. Leucocyte alkaline phosphatase studies were normal. The maximum SGOT was 120 units. Initially the electrocardiogram was normal, but on August 27, atrial fibrillation with a ventricular rate of 180 was present.

Cultures from various pustules revealed *Pseudomonas aeruginosa*. Disc sensitivity was demonstrated to polymyxin, colistin and gentamicin, and resistance to ampicillin, cephalothin and chloramphenicol. Skin biopsy showed the dermis was necrotic with inflammation and thrombosis of blood vessels.

The patient was initially given 10,000,000 units aqueous penicillin every 12 hours, colistin 50 milligrams and gentamicin 40 milligrams every eight hours. The lesions were debrided and subcutaneous abscesses with hemorrhagic exudate were demonstrated. Silver nitrate (.5 per cent) dressings were applied to the lesions and kept moist. New lesions continued to appear, and on August 25 the penicillin was discontinued and carbenicillin, 4 grams every four hours intravenously, was started. On August 27 the patient was hypotensive (BP 80/40), fibrillating (ventricular rate 180) and clinically jaundiced. The patient was digitalized and given three additional units of packed red blood cells since the hemoglobin had decreased to 7.0 grams per cent. The gentamicin and colistin were decreased to 40 and 50 milligrams daily on August 29 because of the increase of blood urea. The carbenicillin was decreased to 2.5 grams every 6 hours on August 30 because of the jaundice and abnormal liver function tests. New skin lesions were not noted after August 30. Gentamicin was discontinued on August 30, colistin on September 6, and carbenicillin on September 18. Skin grafts were applied to both legs on September 18 from the right thigh.

The patient was dismissed from the hospital without medications on October 8. The white blood count was 8,150, with a normal differential. Subsequent followup examinations have been uneventful.

## Discussion

Skin lesions are prominent signs of *Pseudomonas septicemia*.<sup>2</sup> They begin as macules or vesicles and later become bullous and pustular. When the surface epithelium is denuded, a characteristic ulcerating gangrenous lesion is produced. This was initially described by Barker in 1897 and the classic description of ecthyma gangrenosum was by Fraenkel in 1917.<sup>3, 4</sup> It occurs most commonly in the ano-genital region, inner aspect of the thighs and extremities. Vesicular lesions occur in clusters on an erythematous base and contain a cloudy opalescent fluid. The lesions are generally painful. The distribution and

appearance of lesions in the present case were typical. The demonstration of gram-negative bacilli in the vascular wall in biopsy specimens is pathognomic of such infections.<sup>5</sup> The areas of necrosis in this case were sufficiently extensive to require grafting after the infection was controlled.

Jaundice in this patient may have been the result of gram-negative septicemia, hemolysis secondary to infection or medication, or toxic hepatitis secondary to phenylbutazone. Although visceral involvement following *Pseudomonas septicemia* is common, particularly in the lungs and kidneys, hepatic disease and jaundice have been infrequent.<sup>6</sup> Hemolysis probably occurred as evidenced by the rapid decrease in hemoglobin; however, direct and indirect Coombs tests were negative. The predominant increase in direct reacting bilirubin would not support this degree of jaundice from hemolysis alone. Toxic hepatitis and death have been associated with phenylbutazone.<sup>7</sup> An elevation of SGOT has been reported with administration of carbenicillin, but liver dysfunction of this severity has not been previously associated with this antibiotic.<sup>8</sup> Multiple factors were probably responsible for jaundice in this patient.

Renal insufficiency as demonstrated by the rapidly rising blood urea and creatinine created additional problems in this patient. Renal failure is common following gram-negative septicemia, particularly when associated with hypotension. Colistin and gentamicin also may cause nephrotoxicity. Hyponatremia which occurred with the decreased urinary output, heart failure and fluid retention also aggravated the renal insufficiency. The dosage of all three antibiotics which are excreted primarily by the kidneys was subsequently reduced. Gentamicin which was considered the most renal toxic of the three was the initial drug to be discontinued. The renal failure, however, was reversible and blood urea and creatinine were normal prior to the patient's dismissal.

*Pseudomonas* infections are generally associated with other debilitating illnesses such as severe burns, leukemia, cystic fibrosis, or medical or surgical problems requiring prolonged widespread antibiotic coverage.<sup>2</sup> The susceptibility of these individuals can often be attributed to the primary disorder, but the use of radiation, corticosteroids, and drugs which alter the leucocytic, inflammatory, or immune response are important factors. Although phenylbutazone has been associated with side effects similar to corticosteroids, *i.e.* fluid retention and gastrointestinal ulceration, increased susceptibility to infection has been uncommon except when associated with agranulocytosis. *Pseudomonas* infections are frequently accompanied by leucopenia. The leucocytosis in this patient was sufficient to suspect an early leukemia. The association of leukemia and phenylbutazone ad-

ministration has been previously noted.<sup>9</sup> Leucocyte alkaline phosphatase studies and eventually a normal white count and differential would not indicate this diagnosis.

*Pseudomonas aeruginosa* is resistant to most antibiotics.<sup>2</sup> Polymyxin and colistin are bactericidal *in vitro* to most strains of *Pseudomonas*, but eradication of infection with these agents has generally been unsuccessful. Carbenicillin (disodium alpha-carboxybenzpenicillin) is a semisynthetic penicillin which has been shown to be effective in *Pseudomonas* infections in high concentration. Although most organisms are not susceptible to less than 50 to 100 micrograms per milliliter, these levels can be obtained because of the low toxicity of the drug.<sup>10</sup> Resistance to carbenicillin develops rapidly, however, and combined use with gentamicin is recommended for this reason.<sup>11, 12, 13, 14</sup> Sonne and Jawetz have demonstrated synergistic activity of carbenicillin and subinhibitory amounts of gentamicin in certain strains of *Pseudomonas in vitro*.<sup>15</sup> Bactericidal activity could be demonstrated with concentrations of the drug which could be attainable in tissues. Carbenicillin is concentrated in the urine and has been effective in treating *Pseudomonas* urinary infections. Because of the rapid occurrence of resistance, reservation of this drug for only systemic infections should be considered. The use of gentamicin is limited by ototoxicity and nephrotoxicity.

## References

1. Gessard, C.: Sur les colorations bleue et verte des langes a pansements. *Compt. rend Acad. d. Sc.* 94:536, 1882.
2. Curtin, J. A., Petersdorf, R. G. and Bennett, S. L., Jr.: Review of ninety-one cases. *Ann. Int. Med.* 54:1077, 1961.
3. Barker, L. F.: The clinical symptoms, bacteriologic findings and postmortem appearances in cases of infection of human beings with bacillus *Pyocyaneus*. *JAMA* 29:213, 1897.
4. Fraenkel E.: Weitere untersuchgen über die menschenpathogenitat des bacillus *Pyocaneus*. *Z. Hyg. Infektionskr.*
5. Teplitz, C.: Pathogenesis of *Pseudomonas* vasculitis and septic lesions. *Arch. Path.* 80:297, 1965.
6. Forkner, C. E., Jr., Frei, E., III, Edgcomb, J. H. and Utz, J. P.: *Pseudomonas* septicemia. *Am. J. Med.* 25:877, 1958.
7. Maberly, D. J. and Greenhalgh, R. M.: Jaundice and exfoliative dermatitis due to phenylbutazone. *Br. J. Derm.* 82:618, 1970.
8. Marks, M. I. and Eickhoff, T. C.: Carbenicillin: A clinical and laboratory evaluation. *Ann. Int. Med.* 73:179, 1970.
9. Leavesley, G. M.: Phenylbutazone and leukemia, Is there a relationship? *Med. J. Australia* 2:963, 1969.
10. Smith, C. B., Wilfert, J. N., Dons, P. E., Kurrus, T. A. and Finland, M.: In-vitro activity of carbenicillin and results of treatment of infections due to *Pseudomonas* with carbenicillin singly and in combination with gentamicin. *J. Inf. Dis.* 122:514, 1970.
11. Bell, S. M. and Smith, D. D.: Resistance of *Pseudomonas aeruginosa* to carbenicillin. *Lancet* 1:753, 1969.

12. Cooper, R. G., Rice, J. C. and Penfold, J. L.: *Pseudomonas* infection treated with carbenicillin and gentamicin. *Med. J. Australia* 1:517, 1969.

13. Bodey, G. P., Rodriguez, V. and Luce, J. K.: Carbenicillin therapy of gram-negative bacilli infections. *Am. J. Med. Sc.* 257:408, 1969.

14. Sonne, M. and Jawetz, E.: Combined action of carbenicillin on *Pseudomonas aeruginosa in vitro*. *App. Microbiology* 17:893, 1969.

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# Amantadine in Parkinsonism

## *Amantadine Hydrochloride in the Treatment of Parkinson's Disease*

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R. RANJINI, M.D., M.R.C.O.G., Topeka

THE USE OF Amantadine in Parkinson's disease resulted from the serendipitous discovery of Dr. Schwab at Harvard Medical School, in April 1968, when a 58-year-old woman who was on Amantadine for the prevention of Asian flu found her Parkinson's disease improved. His first report appeared in the *Journal of the American Medical Association* on May 19, 1969. Our observations are on 38 patients treated in the Topeka VA Hospital in a program started in July, 1969.

Amantadine is an anti-viral agent. The drug is a basket molecule (*Figure 1*) that is, it is not flat essentially as seen in the chemistry books, but is built up with a little handle on it like a fruit basket and it is the only molecule like that that has been synthesized. It is a white, crystalline compound freely soluble in water and is a symmetrical 10-carbon cage amine. In man, the drug is absorbed rapidly, reaching peak blood levels in one to four hours and nearly all of it is recovered unaltered in urine.

**ACTION:** The precise mode of action is not clearly known, but similarity of its therapeutic effect to L-Dopa suggests that it must act on the dopamine

in the nervous system. Another hypothesis forwarded is that it has a mobilizing action on catecholamines. The refractoriness of Amantadine could be explained by the mobilization, followed by exhaustion of the catecholamines.

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**Amantadine produces beneficial effect with a success rate of 70 to 80 per cent. L-Dopa produces much more significant improvement, but along with 100 per cent side effects, some rather intolerable. In our series, we have used Amantadine in mild and moderately severe Parkinson's disease and have used L-Dopa on the more incapacitating Parkinson's disease.**

**The remarkable feature of Amantadine is the speed with which beneficial effects are noted as early as the second or third day.**

**Amantadine is well tolerated and easy to administer.**

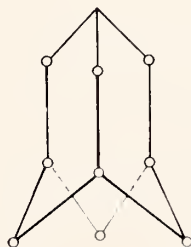
**It has 100 per cent effect on drug-induced Parkinsonism, unlike L-Dopa.**

**Side effects are not severe and few, and they promptly disappear by removal of the drug or adjusting to concomitant medication.**

**No toxic effects have been noted so far as seen by follow-up blood studies, etc.**

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### STRUCTURE OF AMANTADINE HCl



SYMETRICAL C-10 PRIMARY AMINE WITH UNUSUAL CYCLIC STRUCTURE

*Figure 1.* Structure of molecule.

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Presented at the annual meeting of the Kansas Chapter, American College of Physicians, Overland Park, Kansas, February 19, 1971.

From the development in some of the patients of a dry mouth and bladder difficulties, it is suggested that Amantadine has an atropine-like action, but the difference between Amantadine and other anti-cholinergic drugs is its broad therapeutic spectrum of action, with equal improvement in akinesia and rigidity.

*Table 1* shows 38 patients (35 males and 3 females) with Parkinson's disease. The duration of the disease varied from 6 to 22 with a mean of 8 years.

TABLE 1	
Sex of Patients	
Male .....	35
Female .....	3
Duration of Disease	
All cases .....	4-22 Years
Mean .....	8 Years

Table 2 shows the type of Parkinson's disease and the distribution according to the age groups.

EVALUATION: Each patient's history and complete physical examination were done at the start of the trial. Score performance sheets were kept with timed tests done, like walking a measured distance with 180 degree turn, doing small tasks like tying shoe laces, buttoning and unbuttoning, picking up a set number of different sized coins, set number of pronation-

RESULTS: On the whole, the results we obtained are in agreement with Dr. Schwab's results in that the optimum dosage seems to be 200 milligrams per day and no appreciable increase in benefits seemed to be derived in doses greater than 300 milligrams. Patients who were given higher doses than that developed confusion and nightmares and even convulsions. When a patient developed confusion on 300 milligrams a day, symptoms promptly disappeared when he was taken off the drug. This is in contrast with the British workers, Dr. Parkes and Dr. Hunter, who claimed much better results at 300 milligrams or more. Perhaps this is because the predominant ages in our group of patients are from 60 to 70, and the frailer, older individuals do not seem to withstand higher dosages. As a matter of fact, in two patients who are in their 70's, their optimum dosage seems to be 50 milligrams twice a day and they maintained their moderate improvement with this type of response.

TABLE 2					
Type of Parkinson's Disease	Total Cases Treated	Age Groups			
		40-50	50-60	60-70	OVER 70
Idiopathic and arteriosclerotic .....	25			9	16
Post-encephalitic .....	2		1	1	
Drug-induced, chronic .....	7		—Ages 50-70—		
Hemi-Parkinson's .....	4	—Ages 40-55—			
Total	38				

supination movements of each hand, writing a set phrase, recording the voice before and after and movies showing locomotion and position both before and after. Double blind trial with placebos was not done. Weekly blood count, blood picture, chemistry, urinalysis were done to begin with, and every month later on.

DOSAGE AND ADMINISTRATION: Amantadine is administered as 100 milligram capsules. The patient was given one capsule in the morning after breakfast for the first four to five days and then an additional dosage of 100 milligrams capsule was added after noon lunch. Occasionally, an additional dosage of 100 milligrams after supper was also added. Amantadine is available in a liquid form for those who cannot swallow the capsule. Some of the patients had been taking moderate doses of anti-cholinergic drugs, and these were continued unchanged unless there was some evidence of side effects.

Table 3 shows the percentage of success with various types.

Figure 2 shows the three types of responses that we obtained with Parkinson's disease. To begin with, there is a failure rate of about 15 to 20 per cent. The first figure shows that in 18 patients, nearly half, there is a good initial response with 60 to 80 per cent improvement in their symptoms and maintained at this level for long periods of time.

TABLE 3	
Type of Parkinson's Disease	Percentage of Sustained Improvement After Treatment
Idiopathic and arteriosclerotic .....	80-85
Post-encephalitic .....	15-20
Drug-induced, chronic .....	100
Hemi-Parkinson's .....	100



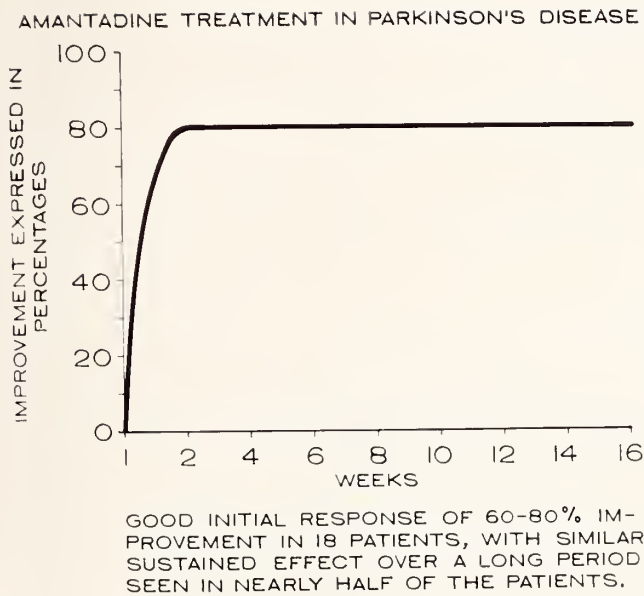


Figure 2 shows the three types of responses that were obtained with Parkinson's disease.

Figure 3 shows a second type of response. Initial improvement of 80 per cent which dropped to 40 to 50 per cent in some weeks and maintained at this level from then on. This type of response was seen in about 10 patients.

Figure 4 shows the initial improvement as only about 40 to 50 per cent. After about six weeks the improvement drops rapidly. At this time, the Amantadine is stopped for about two to three weeks and then started again, and the improvement then climbs up to 60 to 70 per cent and is maintained at this level. This type of response was seen in five patients. Probably this refractoriness could be explained by the exhaustion of the catecholamine. Amantadine has effect on the same symptoms of Parkinson's disease and in the same order as L-Dopa, that is, it is most effective in helping akinesia, rigidity and stiffness of Parkinson's disease. It was less effective against tremors, although in some cases they did diminish, but did not completely disappear. Siallorrhoea, difficulty in swallowing, speech difficul-

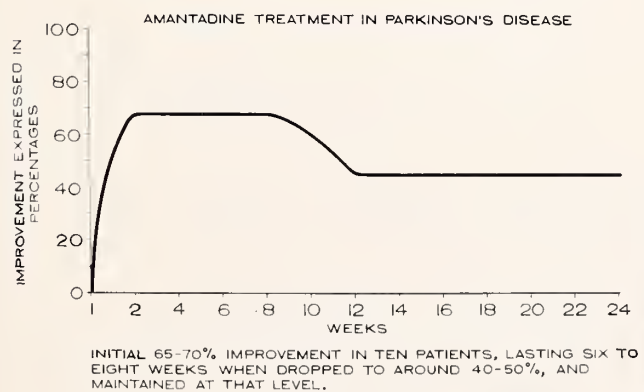


Figure 3 shows a second type of response.

ties, masking of the facies, micrographia, difficulty in alternating movements, all improved. Unlike L-Dopa, Amantadine is quite effective on drug induced Parkinson's disease. Remarkable feature is speed of action.

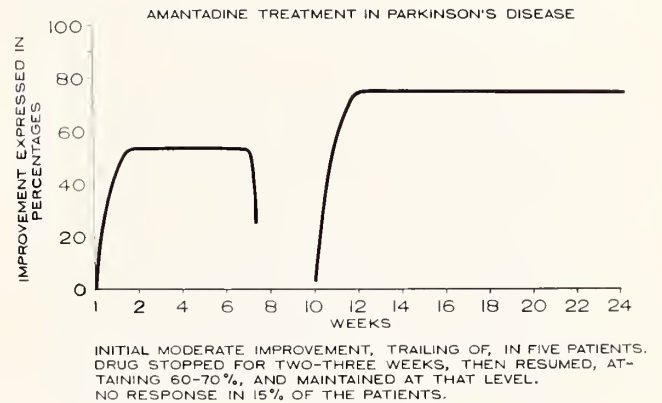


Figure 4 shows the initial improvement.

**DURATION OF TREATMENT:** The earliest patient treated was one year, four months ago, and the patients who have been treated for over one year have still maintained their response. In other words, in this series of patients, we find that they have an effect that is sustained. This is in contrast to the other British workers, like Hunter, who did not feel the same sustained effect was obtained. However, this refractoriness seems to have been circumvented by stopping and restarting in the same dosage or an alternate dosage.

Table 4 shows side effects.

1. Sensitization to other anti-cholinergic drugs occurred in one third of our patients, particularly to Cogentin. These symptoms completely disappeared by taking the patient off Cogentin or any of the other anti-cholinergic drugs.
2. Confusion, restlessness, and agitation was seen in about one third of our patients and it disappeared

TABLE 4	
Side-Effects	Observed in
1. Sensitization to other anti-cholinergic drugs, particularly to Cogentin .....	One-third of patients
2. Confusion and restless agitation ...	One-fourth
3. Nightmares and hallucination .....	One patient
4. Dizziness, shakiness, empty-feeling in stomach .....	Some
5. Anorexia .....	Some

Note: No postural hypotension or convulsions, amnesia or ankle edema were observed.

promptly when they were taken off the drug. If the patient was on Cogentin, his confusion disappeared by discontinuing the Cogentin and restarting on Amantadine. Nightmares and hallucinations were seen in only one patient and that was when his dosage was increased to 300 milligrams. These disappeared when the drug was reduced. Dizziness and shakiness were experienced in some and disappeared with reduction of the dosage. Anorexia was noted in some. Convulsions were not seen. No postural hypotension was noted. Amnesia was not seen; neither was ankle edema seen.

Combination therapy has been tried in four cases with very good results. There are two types of patients on which this combination has been used. On one type of case, as the L-Dopa is being built up, the patient reaches a level where a further increase in the dosage increases side effects which become intolerable and hence the patient is on sub-optimal

doses of L-Dopa. Adding Amantadine to L-Dopa helps the patient to obtain effectiveness without increase in L-Dopa and thereby increase in the side effects. In certain patients, when L-Dopa is built up with steady improvement to begin with, for some obscure reason the patient deteriorates slowly and the benefit that is obtained by L-Dopa goes rapidly down. When Amantadine is added to such patients and the L-Dopa continued, he comes back to the original level of improvement of his benefits.

Our results support Dr. Schwab who explains that the two drugs have an additive therapeutic action. We do not find what the British authors claimed, that when L-Dopa is added to Amantadine there is benefit and when Amantadine is added to L-Dopa there is no benefit. As a matter of fact, when two of our patients who were on L-Dopa did not improve, they were taken off L-Dopa and started on Amantadine and showed beneficial response.

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# Desquamative Interstitial Pneumonia

## *A Case Report and Review of the Literature*

JACK M. CATLETT, M.D., *Shawnee Mission*

### Introduction

IN 1965, Liebow, Steer, and Billingsley<sup>1</sup> described 18 patients having a proliferative disorder of the alveolar lining cells with desquamation into the air spaces. They called this condition desquamative interstitial pneumonia (DIP). Some have argued that this descriptive term is not completely accurate as the spaces are not really filled with inflammatory cells as would be seen in a true pneumonia, and the intraseptal reaction is not as predominant as the term "interstitial" would suggest. Nevertheless, case reports in the literature<sup>2-12</sup> support the fact that this disorder is a distinct pathologic entity having rather uniform clinical characteristics.

### Clinical Data

The patient, a 43-year-old Caucasian male office-worker, was admitted to St. Luke's Hospital on August 26, 1970, with the chief complaint of shortness of breath. The patient was first seen in October 1969, for a general evaluation with the only complaint being mild shortness of breath together with slight soreness and aching in the anterior chest during the previous six months. At the onset of his symptoms, he reduced his smoking from his usual one and a half packages a day down to approximately three-fourths of a package daily.

The past history revealed no significant illnesses and there was no history of allergy or toxic exposure. The family history revealed that the patient's mother died at 72 years of age, of unknown causes, but had suffered from Parkinsonism and some type of leukemia. The father died at the age of 78 with a cerebral vascular accident and with a prior history of diabetes mellitus which developed in later life and which was controlled with tolbutamide (Orinase) and diet. Two sisters are living and well.

Complete physical examination in October 1969 revealed no abnormalities except for the impression of minimal clubbing of the fingers and reduced breath sounds. The chest x-ray was interpreted as normal. The vital capacity was 4 liters which was 94 per

cent of the predicted level with the one second vital capacity (FEV<sub>1</sub>) of 2.4 liters. No specific diagnosis was made at this time and the patient was given no medication, but was advised to discontinue smoking, which he did, and to have a repeat x-ray in six months (*Figure 1*).

He called on August 9, 1970, complaining of generalized muscular aching with fever of 103 de-

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**A patient having the diagnosis of desquamative interstitial pneumonia made by lung biopsy is reported. In retrospect, it is believed that this patient must have been having symptoms from this disorder as early as March 1969, when he developed mild shortness of breath and chest aches. He related the common historical features of cough, shortness of breath, fatigue, weight loss, and chest discomfort. He displayed the common findings of clubbing, basilar rales, tachypnea, and slight cyanosis. The laboratory demonstrated a reduced arterial oxygen and carbon dioxide tension and typical histology on lung biopsy. The x-ray finding of basilar densities, together with the symptoms, showed remarkable and early clearing with the administration of methylprednisolone.**

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grees. Ampicillin was prescribed, but two days later the patient was feeling completely well, afebrile, and mowed his yard without difficulty so he discontinued this medication. On August 12, 1970, he again developed slight fever and generalized aches so he resumed the ampicillin, but his symptoms continued to increase in severity. He came to my office on August 19 complaining of generalized aches, headache, photophobia, weakness, and mild shortness of breath. Examination revealed rales in both bases, but the chest x-ray showed only an increase in basilar markings. It was believed that he was suffering from a viral infection with possible mild encephalitis and was told to remain at rest in his home, which he did until August 26 when he returned to my office with

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Presented at the annual meeting of the Kansas Chapter, American College of Physicians, Overland Park, Kansas, February 19, 1971.

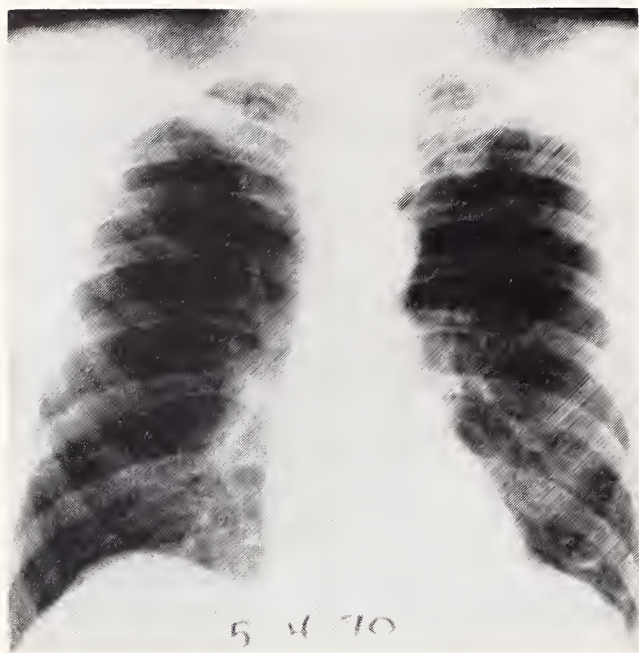


Figure 1. Roentgenogram obtained May 4, 1970, is essentially normal.

severe shortness of breath. X-ray examination at this time showed a remarkable change with basilar densities and because of profound dyspnea he was admitted to the hospital for further evaluation.

Upon his admission to St. Luke's Hospital on August 26, he was found to be in moderate respiratory distress. He was unable to walk across the room without severe dyspnea. He had a rather constant dry cough. His weight had fallen from his usual weight of 155 pounds to 139 pounds. The blood pressure was 110/60 and the pulse rate was 90 per minute. The respiratory rate was 30 per minute at complete rest. The patient was well developed and muscular and the skin revealed no icterus or petechiae. There was minimal cyanosis found in the nail beds and clubbing was noted, which seemed no more advanced than when first seen in October 1969. The eye, ear, nose and throat examination revealed no abnormalities. No neck mass or thyromegaly was noted. The carotid pulses were full and without bruit. Examination of the chest revealed equal expansion bilaterally and there was consistently a nonproductive cough precipitated by deep breathing or exertion. Both diaphragms were mobile and there was some dullness to percussion in both bases. Fine, dry rales were heard in both bases but more prominently in the right base. There was a decrease in the breath sounds heard over the left lung field. The heart tones were normal without accentuation of the second pulmonic sound. No abdominal mass or organ was palpable. The genitalia revealed no abnormality, and the rectal examination revealed a normal prostate with no mass. The deep tendon reflexes and the pedal pulses were normal.

### Laboratory and X-Ray Studies

The hemoglobin was 15.7 grams with erythrocyte count of 5.29 million per cubic millimeter and leukocyte count of 6,510 per cubic millimeter. The differential of the white count was normal. The sedimentation rate was 29 millimeters per hour. The urine analysis was normal. On August 28, the arterial blood pH was 7.50; the arterial PO<sub>2</sub> was 46 millimeters mercury and the arterial PCO<sub>2</sub> was 32 millimeters mercury. An SMA12 was normal except for slight elevation of the SGOT to 65 milliunits per milliliter and the LDH to 220 milliunits per milliliter. Both of these elevations had returned to normal when rechecked on September 8 after therapy had been started. A repeat x-ray of the chest (Figure 2) revealed a normal heart size and configuration. The hilar shadows were not remarkable and there was no widening of the mediastinum. There were dense linear infiltrates involving both bases primarily in the posterior portions. This was interpreted by the radiologist as showing bilateral basilar pneumonia.

### Hospital Course

This patient continued to be so dyspneic that he was actually unable to shave. Because of the severity of his symptoms with no etiology suggested by laboratory or x-ray examination the decision was made to proceed directly to bronchoscopy and lung biopsy. On August 31, 1970, the patient was taken to surgery, where bronchoscopy revealed no abnormalities. The chest was entered through the sixth intercostal space on the left side and the left lower lobe was brought up into the intercostal incision. It was noted

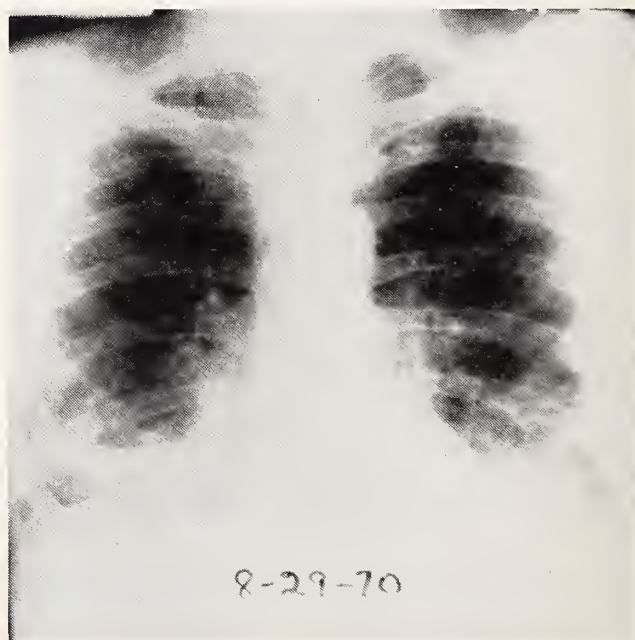
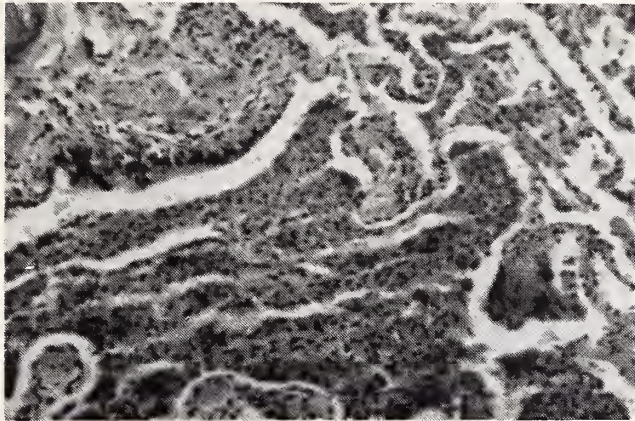


Figure 2. Roentgenogram taken three days after admission shows the basilar densities.



that this lung tissue was being ventilated very poorly. A biopsy was obtained with a frozen section reported as desquamative interstitial pneumonia. The patient had no postoperative complications and the final pathologic report stated that the alveolar spaces were filled with alveolar-septal cells which were present in large numbers so that they distended some of the alveolar spaces (*Figure 3*). In some areas the alveolar cells were present in the lumen of bronchioles. The alveolar walls were slightly thickened and slight interstitial fibrosis was present. A Perl stain for iron was negative and a PAS stain showed reddish granules in the cytoplasm of the intra-alveolar septal cells.

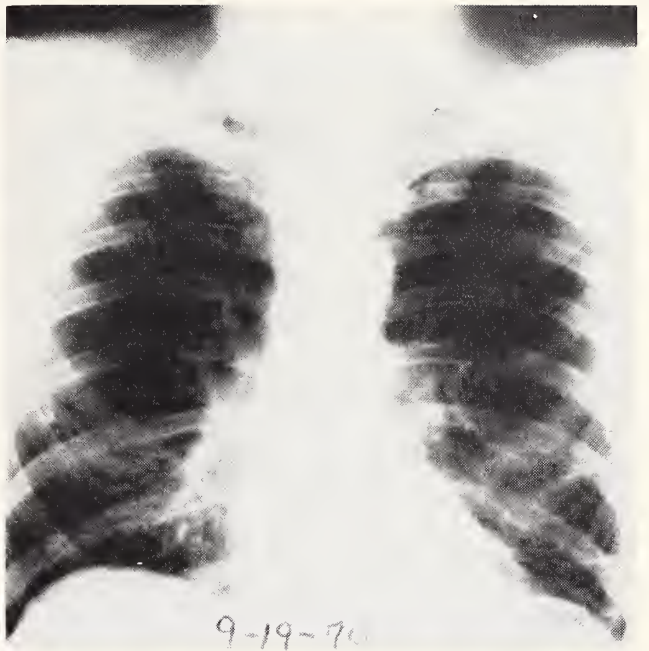


*Figure 3.* The alveolar walls are thick and proliferative but fibrosis is not seen. Pneumocytes fill many alveolar spaces.

On September 2, 1970, methylprednisolone, 16 milligrams by mouth three times a day, was instituted and within 48 hours the patient was noticing much improvement. His cough subsided and there was much less shortness of breath. On September 7 the methylprednisolone dosage was reduced to 16 milligrams two times a day and on September 9 reduced to 4 milligrams four times a day which was the dosage at the time of dismissal. The patient continued to improve remarkably so that he was walking about the hospital without shortness of breath and the cough completely disappeared. Repeat chest x-ray examination on September 8 revealed remarkable clearing. The patient was dismissed on September 9, 1970. The methylprednisolone dosage has been gradually reduced to the level of 2 milligrams daily with complete clearing of both symptoms and x-ray findings (*Figure 4*).

## Discussion

Desquamative interstitial pneumonia must be differentiated from alveolar proteinosis, idiopathic pulmonary hemosiderosis, and Hamman-Rich disease which are all probably disorders of the alveolar epithelium. This differentiation can be easily accom-



*Figure 4.* Roentgenogram taken September 19, 1970, just 17 days after starting treatment with methylprednisolone, shows return to normal.

plished on biopsy in all conditions except possibly for Hamman-Rich disease which Scadding and Hinson<sup>3</sup> have named diffuse fibrosing alveolitis (DFA). These authors found little support for the sharp contrast suggested by Leibow *et al.*<sup>1</sup> between DIP and other forms of interstitial pneumonia. They suggested that the early disease shows exudation of alveolar lining cells with little thickening of the alveolar septa and would use the term desquamative-type fibrosing alveolitis for this early stage. Later, alveolar wall thickening is the major change which conforms to the more usual pathologic change seen in Hamman-Rich disease and they term this as the mural-type fibrosing alveolitis.

Although the terminology is somewhat confusing, the clinical history and the pathologic findings in the patient reported here are quite similar to the majority of cases reported in the literature having the diagnosis of DIP. Most patients with this disorder have been adults, with no sex predominating. The age range of reported cases has been from seven weeks to 65 years.

The clinical syndrome is rather constantly characterized by a history of dyspnea, cough, chest discomfort, fatigue and weight loss. The symptoms may be minimal and may persist for months before becoming significant. Physical findings are usually mild, but in more severe cases include tachypnea, dry crepitant rales in the bases, cyanosis and clubbing of the fingers.

The radiological findings have usually been mild in relation to the symptoms and pulmonary function



impairment. Those who claim that there is a typical radiologic change describe a ground-glass or reticular pattern in the lower lobes which is usually posterior. In nine of the twelve patients reported by Gaensler *et al.*,<sup>2</sup> the initial roentgenograms had a strikingly similar appearance consisting of a slight triangular haziness radiating from the hilus along the heart borders to both bases and sparing the costophrenic angles. There was an increase in number and thickness of the basal vascular markings with loss of definition. The present case had roentgenographic findings quite compatible with this description.

Pulmonary function studies usually reveal what would be anticipated from the appearance of the lung tissue. There is poor ventilation of perfused alveoli. This leads to reduced arterial PO<sub>2</sub> and the reduced arterial PCO<sub>2</sub> is secondary to hyperventilation. In the original report by Leibow *et al.*<sup>1</sup> the arterial PO<sub>2</sub> was over 80 millimeters mercury in only two out of seven patients. The arterial PCO<sub>2</sub> was less than 40 millimeters mercury in eight out of nine patients. Gaensler *et al.*<sup>2</sup> demonstrated the pathophysiology of this condition by measuring the "total venous admixture." This determination includes both the fraction of the cardiac output that is shunted from the right to left side of the heart without exposure to ventilated alveoli and the fraction that perfuses lung areas which are underventilated in relation to the amount of blood which perfuses them. This "total venous admixture" normally is no more than 6 per cent of the cardiac output but in the patients having DIP studied by Gaensler, this was always markedly increased to an average of 15 per cent of the cardiac output.

Cardiac catheterization in five patients reported by Leibow *et al.*,<sup>1</sup> and in three patients reported by Gaensler *et al.*<sup>2</sup> revealed no pulmonary hypertension. The electrocardiogram has not shown any specific abnormality in these patients.

The pathologic changes are fairly uniform throughout the lungs and are characterized by the filling of alveolar spaces with lining cells which seemed to be shed from the alveolar walls. Initially, the septa remain structurally intact but may become thickened in later stages. Also, in advanced disease, the bronchiolar and arterial muscles may become hypertrophied and fibrosis may develop. It has been stated that in the acute phase of diffuse fibrosing alveolitis (DFA) there is swelling of the alveolar septa with fibrinous exudate in the alveoli. In DIP this is not seen. Necrosis of the alveolar wall and hemorrhage may be seen in DFA, but no necrosis is seen in DIP. In most cases the granules seen in the cytoplasm of the shed alveolar cells contain small yellow-brown granules which give a negative reaction for iron, but positive on the periodic acid-Schiff stain. Electron

microscopy,<sup>12, 13</sup> has shown that most of the intra-alveolar cells are macrophages but some granular pneumocytes are also present. In no report has there been any other organ system involvement in this disorder.

Since there is some evidence that the alveolar lining cell is responsible for production of pulmonary surfactant, and some pulmonary diseases that result in filling of the alveolar spaces are associated with decreased activity of the surface lining substance, Thomas *et al.*,<sup>14</sup> thought it would be interesting to study pulmonary surfactant in lungs of patients with DIP. They found that the surface tension of lung extracts from three of these patients was normal and they found abnormality in one patient. They interpreted these findings as indicating that the proliferating and desquamating alveolar cell so characteristic of DIP is able to retain the ability to produce pulmonary surfactant.

Attempts to find an etiology for this disorder have been unsuccessful. The fact that pulmonary changes strikingly similar to those seen in DIP can be produced by the intravenous injection of complete Freund's adjuvant in the rabbit<sup>15</sup> suggests the possibility that this syndrome might represent a hypersensitivity or some other immunologic response on the part of the lung.

### Acknowledgement

Dr. Robert Raich was medical consultant, and the bronchoscopy and lung biopsy were performed by Dr. Patrick Graham.

### References

1. Leibow, A. A., Steer, A. and Billingsley, J. G.: Desquamative interstitial pneumonia. *Amer. J. Med.* 39:369-404, September 1965.
2. Gaensler, E. A., Goff, A. M. and Prewse, C. M.: Desquamative interstitial pneumonia. *New Eng. J. Med.* 274: 113-128, January 20, 1966.
3. Scadding, J. G. and Hinson, K. F. W.: Diffuse fibrosing alveolitis (diffuse interstitial fibrosis of the lungs). *Thorax* 22:291-304, July 1967.
4. Klocke, R. A., Augerson, W. S., Berman, H. H., Burges, F. L. and Rivera, R. A.: Desquamative interstitial pneumonia—A disease with a wide clinical spectrum. *Ann. Intern. Med.* 66:498-506, March 1967.
5. Steinberg, B.: Differentiation of exfoliative bronchoalveolar disease from desquamative interstitial pneumonia. *Amer. Rev. Resp. Dis.* 93:568-577, April 1966.
6. Schneider, R. M., Nevius, D. B. and Brown, H. Z.: Desquamative interstitial pneumonia in a four-year-old child. *New Eng. J. Med.* 277:1056-1058, November 16, 1967.
7. Ansari, A., Buechner, H. A. and Brown, M.: Desquamative interstitial pneumonia: report of a case and review of the literature. *Dis. Chest* 53:511-516, April 1968.
8. Cruz, E., Rodriguez, J., Lisboa, C. and Ferretti, R.: Desquamative alveolar disease (desquamative interstitial pneumonia): case report. *Thorax* 24:186-191, March 1969.
9. Buchta, R. M., Park, S. and Giammona, S. T.: Desquamative interstitial pneumonia in a seven-week-old infant. *Amer. J. Dis. Child.* 120:341-343, October 1970.

(Continued on page 476)



# Diffuse Interstitial Fibrosis

## *Roentgenographic, Physiologic, and Pathologic Abnormalities in Patients With Diffuse Interstitial Fibrosis*

RICHARD W. SPANN, M.D., *Wichita*

ROENTGENOGRAPHIC STUDY of the lungs is the first step in laboratory investigation of patients whose symptoms are those of pulmonary fibrosis. Unfortunately, there are few distinguishing features on x-ray to help delineate the different problems that may present with diffuse interstitial pneumonitis or fibrosis. The picture is almost always of bilateral involvement with scattered reticulonodular densities



*Figure 1*

throughout the lung fields. The x-ray in *Figure 1* was obtained from a patient with chronic furadantin pneumonitis and fibrosis, and typifies the findings in most cases. Some disorders may be characterized by peripheral involvement, as in eosinophilic pneumonitis, and others as central or hilar, as in pulmonary alveolar proteinosis or uremia. Most disorders have more marked findings in the lower half of the lung field, so those with disease usually limited to the bases, as S.L.E., cannot be satisfactorily distinguished. Those entities that may be, at times, characterized by an alveolar pattern are worthwhile to consider separately, however. The chest x-ray in *Figure 2* reveals an alveolar pattern obtained in a patient with leukoagglutinin reaction. Some of the roentgenographic signs of alveolar disease as outlined by Felson are fluffy margins, segmental distribution, butterfly shadow, air bronchogram, and peribronchiolar nodules. A rather limited number of possibilities should be kept in mind with a similar x-ray appearance (*Table 1*).

Honeycombing of the lung, as seen in *Figure 3*, may be seen in a number of interstitial diseases, but is particularly prominent in such diseases as scleroderma, histiocytosis-x, or tuberous sclerosis. These same diseases are also prone to develop repeated pneumothoraces which, if seen, is an aid to diagnosis.

With progression of any type of interstitial disease, a fibrotic, scarred lung is seen. There may be compensatory emphysema in other portions of the lung in addition to the fibrosis.

Physiological changes in interstitial pneumonitis and fibrosis are dependent upon the degree of disease present. *Table 2* lists the physiological changes in order of increased sophistication in pulmonary function testing rather than the progress of abnormalities in any patient.

The vital capacity, flow rates, and static volumes of functional residual capacity (FRC) and residual volume (RV) can be measured easily in any hospital laboratory, usually revealing a decreased vital capacity, reduced FRC and RV, and normal flow rates with significant disease. The inspiratory capacity is the portion of the vital capacity (VC) that is most significantly reduced. Since the FRC is determined by





Figure 2



Figure 3

TABLE 1  
PULMONARY DISEASES THAT MAY  
PRODUCE AN ALVEOLAR PATTERN ON  
THE CHEST X-RAY

- 1. Pulmonary edema
- 2. Pulmonary hemorrhage (trauma, anticoagulants, Goodpasture's syndrome, idiopathic hemosiderosis)
- 3. Sarcoidosis
- 4. Miliary tuberculosis
- 5. Alveolar cell carcinoma
- 6. Lymphoma
- 7. Alveolar proteinosis
- 8. Alveolar microlithiasis

TABLE 2  
PULMONARY FUNCTION ABNORMALITIES  
IN DIFFUSE INTERSTITIAL PNEUMONITIS  
AND FIBROSIS

- Vital capacity reduced
- Functional residual capacity and residual volume
- Normal MBC and MMEF
- Decreased carbon dioxide diffusion
- Reduced lung compliance
- Elevated retractive force
- Reduced PaO<sub>2</sub> with exercise or at rest
- Normal or reduced PaCO<sub>2</sub>



the relationship of chest wall recoil to lung recoil, the increased retractive force of the stiffened lung leads to a decreased FRC. If the retraction is severe enough, it encroaches upon the RV as well.

The normal MBC and MMEF reflect the almost universal absence of airway disease in these patients. There are a few causes of pulmonary fibrosis that may have significant airway obstruction, however. These diseases are sarcoidosis, cystic fibrosis, bronchiectasis, Silo-Filler's disease, and coal worker's pneumoconiosis. It is worthwhile also to remember that normal expiratory flow rates vary with lung volume. With severe restriction of lung capacities, measurable flows may be decreased to abnormal levels without reflecting any intrinsic airway disease.

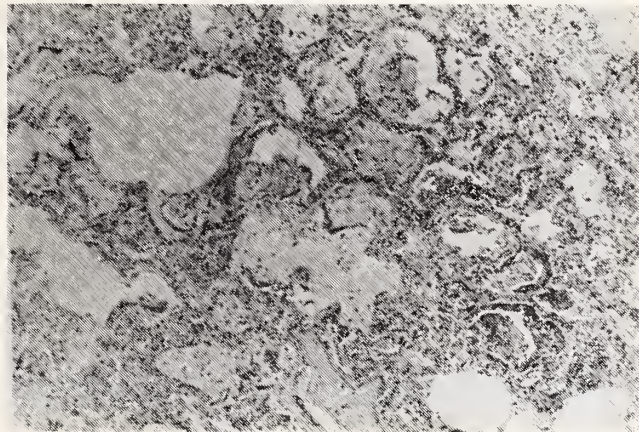


Figure 4

All of the lung capacities may be normal in a patient with interstitial pneumonitis and fibrosis, however, and carbon dioxide diffusion testing becomes necessary to demonstrate the abnormality. In a number of patients with sarcoidosis and hilar adenopathy, for example, decreased carbon dioxide diffusion may be present before any x-ray abnormalities occur. Exercise carbon dioxide diffusion testing makes any abnormality more prominent, and is the preferred technique. In the past, disorders of the lung leading chiefly to decreased CO diffusion have been grouped

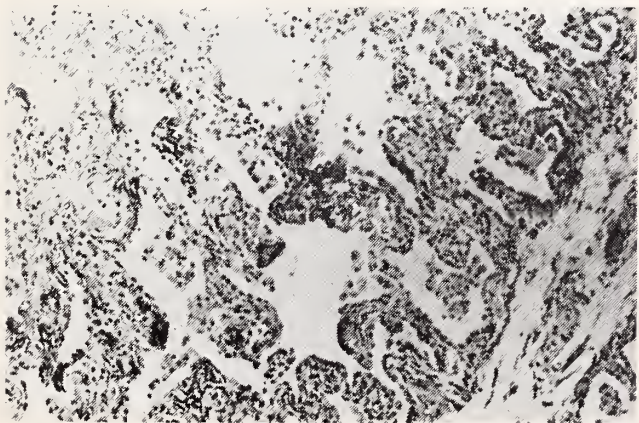


Figure 5

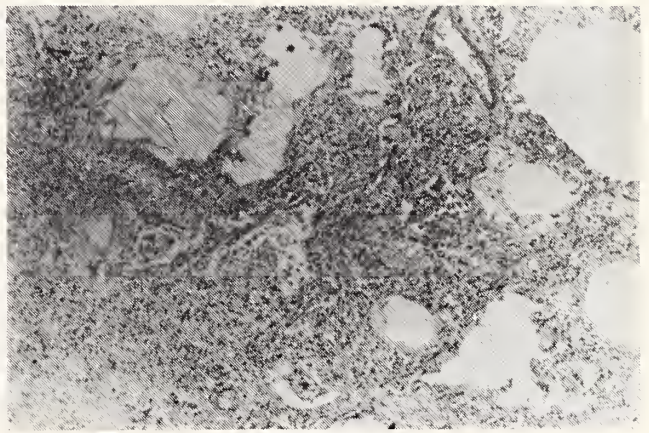


Figure 6

under the alveolo-capillary block syndrome. Such a name as this implies widespread thickening of alveolar walls or interstitial tissue which either "blocks," or prevents rapid exchange of oxygen. Such a pathologic situation does not, in fact, exist. Electron microscopy studies by Divertie have shown that areas of the lung either exchange oxygen by virtue of proximity to capillaries, or the distance is too great for the oxygen to traverse. This pathologic situation is most properly described by the physiologic term ventilation perfusion imbalance.

By simultaneous measurement of the pressure change across the lung, with the corresponding volume change, a measure of the lung compliance may be made. The retractive force reflects stiffness of the lung in a similar way, measuring the tendency of the lung to pull away from the chest wall. This negative pressure can be measured by a balloon positioned in the mid-esophagus.

As the disease progresses, blood gas abnormalities of decreased  $pO_2$  become evident with exercise, and then at rest. Since carbon dioxide is 23 times more soluble than oxygen, it diffuses readily across the thickened tissues. It is not uncommon for these patients to have a decreased  $pCO_2$  due to alveolar hyperventilation. The hyperventilation is possibly related to increased stimuli from thickened tissue in

TABLE 3  
MACROSCOPIC PATHOLOGICAL CHANGES  
IN INTERSTITIAL PNEUMONITIS  
AND FIBROSIS

Thickened pleural surfaces with occasional adhesions to the chest wall  
Decreased size of the lung  
"Rubbery" consistency  
Reddish gray color  
Fine honeycomb of smooth walled air-filled cysts



TABLE 4  
MICROSCOPIC PATHOLOGICAL CHANGES  
IN INTERSTITIAL PNEUMONITIS  
AND FIBROSIS

Intraalveolar exudate of fibrinous edema fluid, red blood cells, and desquamated histiocytic cells
Histiocytic cell accumulation in the interstitial tissue
Appearance of reticulin fibrils and development into Collagen

the lung. That hypoxia is not the stimulus is shown by the continued alveolar hyperventilation upon breathing 100 per cent oxygen.

In most of these cases, lung tissue is needed for proper analysis of the problem and treatment of the patient. It may be obtained by several methods, such as open biopsy, transthoracic, or transbronchial biopsy. In addition to histologic review of the tissue cultures, special staining procedures for certain organisms, and x-ray diffraction may be needed.

A few disorders, such as infections, certain pneumoconioses, busulfan pneumonitis, malignancies, sarcoidosis (occ), may be properly diagnosed by the biopsy itself. More commonly, however, a diagnosis of "diffuse interstitial pneumonitis or fibrosis" is returned, with no positive etiology. Such a histologic picture is still compatible with disorders such as sarcoidosis, histiocytosis x, and Farmer's lung, because diagnostic criteria may be lacking in the tissue reviewed. The macroscopic appearance of the lung is summarized in Table 3. Of more interest is the microscopic pathological picture, and in general it is represented by three categories of progressive involvement (Table 4). In any given case, the histologic picture varies, and different sections of the same lung may reveal any one of the three stages of disease. In general, however, the more chronic cases show little evidence of earlier pathological changes. This progressive involvement is seen in Figures 4, 5, and 6, taken from Spencer's *Pathology of the Lung*.

## Desquamative Interstitial Pneumonia

(Continued from page 472)

10. Rosenow, E. C., III, O'Connell, E. J. and Harrison, E. G., Jr.: Desquamative interstitial pneumonia in children. *Amer. J. Dis. Child.* 120:344-348, October 1970.
11. Stewart, K. R., Rona, G. and Lillie, J. B.: A case of desquamative interstitial pneumonia. *Canad. Med. Assoc. J.* 102:736-739, April 11, 1970.
12. Brewer, D. B., Heath, D. and Asquith, P.: Electron microscopy of desquamative interstitial pneumonia. *J. Path.* 97:317-323, February 1969.

13. Shortland, J. R., Darke, C. S. and Crane, W. A. J.: Electron microscopy of desquamative interstitial pneumonia. *Thorax* 24:192-208, March 1969.
14. Thomas, P. A., Harriman, B. B. and Kmiecik, J. E.: Pulmonary surfactant in lungs of patients with desquamative interstitial pneumonia. *Amer. Rev. Resp. Dis.* 101:967-968, June 1970.
15. Deodhar, S. D. and Bhagwat, A. G.: Desquamative interstitial pneumonia-like syndrome in rabbits. *Arch. Path.* 84:54-58, July 1967.

## Chronic Active Hepatitis

(Continued from page 446)

Mistilis' papers, we found three of eight patients were positive for this antigen. All three of these patients had a history of parenteral exposure (two by blood transfusions and the third by intravenous narcotics). This is in agreement with the findings of other authors who have found significant instances of persistent antigenemia in groups of patients with chronic active hepatitis.<sup>11, 12</sup>

## References

1. Alpert, L. and Vetancourt, R.: Chronic hepatitis. *Arch. Path.* 88:593, Dec. 1969.
2. Mistilis, S., Skyring, A. and Blackburn, C.: Natural history of active chronic hepatitis. *Austral. Ann. of Med.* 17:214, 1968.
3. de Groote, J., et al.: A classification of chronic hepatitis. *Lancet* 2:626, Sept. 14, 1968.
4. Kunkel, H. G., et al.: Extreme hypergammaglobulinemia in young women with liver disease of unknown etiology (abstract). *J. of Clin. Invest.* 30:654, 1951.
5. Bearn, A., Kunkel, H. and Slater, R.: The problem of chronic liver disease in young women. *Am. J. of Med.* 21:3, 1956.
6. Page, A. and Good, R.: Plasma cell hepatitis. *Lab. Invest.* 11:351, 1962.
7. Mackay, J., Weiden, S. and Hasker, J.: Autoimmune hepatitis. *Ann. N. Y. Acad. Sci.* 124:767, 1965.
8. Mackay, I., Taft, L. and Cowling, D.: Lupoid hepatitis. *Lancet* 2:1323, 1956.
9. Read, A., Sherlock, S. and Harrison, C.: Active juvenile cirrhosis considered as part of a systemic disease and effect of corticosteroid therapy. *Gut* 4:378, 1963.
10. Tisdale, W. A.: Subacute hepatitis. *New Eng. J. Med.* 268:85, 138, 1963.
11. Wright, R., McCollum, R. and Klatskin, G.: Australia antigen in acute and chronic liver disease. *Lancet* 2: 117, July 19, 1969.
12. Vischer, T. L.: Australia antigen and autoantibodies in chronic hepatitis. *Brit. Med. J.* 2:695, 1970.

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## *The President's Message*

### The Health Care Crisis Revisited

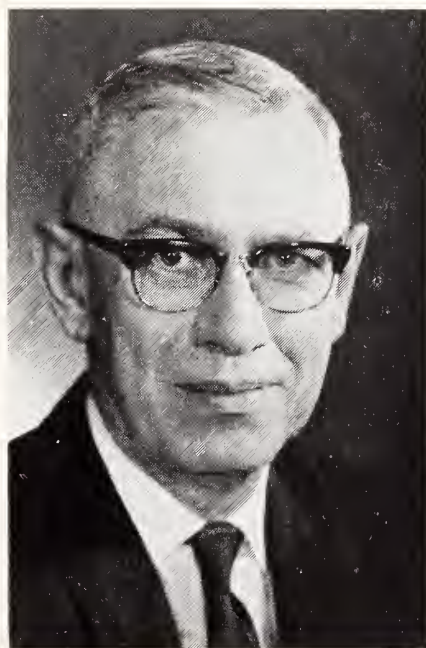
Most news these days about physicians and medicine in general is bad. At least the American public has for years been given only a critical and unflattering picture of the health care system. Anguished outcries for change, reform and control have been uttered by columnists, pundits and editors—not to mention the denunciations of television.

It was, therefore, refreshing—and surprising—to read a recent favorable essay in *The Saturday Review*, of all places! Harry Schwartz writes in the August 14 issue of that prestigious magazine that perhaps the present system is considerably better than anything that has been or may be devised in the future. He points out that the costs of some new health care scheme might be prohibitive. (Sounds somewhat familiar!)

Schwartz asks why our critics fail to mention the dramatic decline in U. S. infant mortality, or the drop in our national death rate despite the increase of older people in our population. He points out that the ancient charges against the AMA of limiting physician production are untrue and that the U. S. has one of the highest ratios of physicians to population in the world. Moreover, he continues, between 1950 and 1970 the number of M.D.'s in the U. S. rose by 50 per cent.

In discussing costs Schwartz points out that the 1967-1970 consumer price index for physicians' fees rose about 21 per cent—the same percentage by which average hourly earnings of workers in industry rose.

Finally, he calls attention to the "highly pluralistic" nature of American Medicine, ranging from Federal programs (V.A., Armed Forces) to Medicare, group practice and the individual practitioner. By its nature the American health care system gives



the patient a wide choice of systems. Where else in the world is this possible?

There is much more. The essay is well worth reading and re-reading. The title is "Health Care in America, a Heretical Diagnosis." To this reader it doesn't sound heretical at all, but rather pure orthodoxy.

*Dr. J. Reals, M.D.*

*President*



## *Right On*

As if the medical brewing vat were not bubbling sufficiently already, someone has thrown in a new charge of yeast in the form of a pronouncement that good health is a right to which all are entitled. Some have modified this to say that health *care* is the proper expression. Reading it either way, the implication is obvious: purveyors of health services had better come across.

The medical profession has reacted characteristically: defensively. At one end of the line, there is rigid denial. At the other, there is panicky agreement and the supplication for someone on the outside to tell us how we have erred and how we can do better. In between, there are various degrees of agony, chagrin, and protestation that we haven't done such a bad job, especially in the context of the prevailing social, economic and cultural patterns of any particular time.

Good health is not a right. It is a composite of a series of fortuitous miracles for which no one is truly as grateful as he should be. From the moment of conception, the human organism is assaulted by all manner of noxious influences. A slight deviation in a multitude of fantastic chemical processes can terminate it or render it defective. The fetus that survives to birth has demonstrated a hardihood which bodes well but by no means guarantees survival. Threats are not removed at birth, merely changed in character. Life is a continuing process of putting off death, and after death the organism becomes a statistic to prove the futility of the struggle to which physicians more than any others have addressed themselves. Good health, individual and collective, physical and mental, is the highest achievement of human effort.

Mankind's belief that good health should be an inalienable norm stems from a very simple consideration: ill health is uncomfortable. The average person who feels well is disinclined to do anything positive

to maintain that state—it is too inconvenient. When the discomfort of illness intrudes, it reminds him of his human frailties and he resents the discomfort, the restrictions, the imposition of disagreeable therapies—and the expense, whether in loss of time or actual cost. The medical profession has long been the focus of much of the hostility engendered by illness, and this hostility is now in a position of being reinforced by the concept that the individual's rights have been violated—to the economic betterment of his physician. It is almost a daily occurrence to read of an individual or family, after an illness or accident, suffering economic devastation because "of medical expenses." Not the rent, the groceries, the utilities. Not the lack of financial reserve because funds that might have been put aside for medical emergencies have been spent for other things. After all, the right to good health has been crassly invaded, and the offended should be remunerated by a sympathetic society. Even the individual equipped to meet the cost, after a moment of gratitude for his recovery, feels ill-used for having to pay to be returned to the state he considers his right.

We may be accused of playing semantic games but we think a slight restatement is in order, and it has basis in our constitutional philosophy. We suggest that the right, as in the case of happiness, is to the *pursuit* of good health. This means that the effort should be primarily on the individual. The government—meaning all of us—is obligated to provide the climate and the means—even the incentive—for the individual to pursue the maintenance of good health for himself and his family. In this country, there is no guarantee that a man can become rich, if that is his desire, but there is the opportunity. There is no guarantee for any given achievement, but there is the opportunity. There is no guarantee that he will never be ill, for good health is the goal, not the fixed base. If society exposes him to dangers or impedes



his efforts to protect himself, it must compensate or relieve these injustices.

The public is more knowledgeable and sophisticated in health matters than it once was—so are physicians. But the medical profession has failed in its education of the public. It has failed to keep the public aware that good health is not an irrevocable endowment whose loss is to be blamed on those seeking to return it to them. As a nation, we are too well fed, but there are malnourished—even starving—people. We have yet to hear the farmers, food processors, or merchants blamed for them. Although we are the best-clothed nation (not counting teenagers, of course), there are those who have only rags. But the textile producers and processors have not been assailed with criticism of their methods and threats to give outsiders control over their efforts. Seemingly, health is a more profound “right” than food or clothing.

The other shortcoming of physicians in education of the public is their failure to get across the realization that good health—preventive or corrective—requires time and effort and these, translated into economic terms, mean money. The average person considers that health insurance is the ultimate in foresightedness and he need give no more thought to health protection. Health insurance has become a standard fringe benefit in almost every form of employment because it is a relatively painless way to acquire this protection, and many would not use the cash equivalent to the same end. But the individual accepts the deduction from his pay on the assumption that that is all there is to it. When illness occurs and he finds that there are services not covered or time limits on the coverage, he finds his lot triply painful: the illness which violates his right to be well, the vexing thought of all that money he has been paying in (suddenly magnified in retrospect) to prevent this sort of thing, and the pain of being faced with additional expense (which is obviously just to make the doctor that much richer). Pained or not, he must be taught that good health costs money one way or another—but not nearly so much as poor health.

We don't know whether this country is the healthiest country in the world or not, and neither does anyone else. Until a standard means of measurement of all factors is devised, until adjustments are made for the social, cultural, and ethnic factors, the question is moot. If the American citizen wants his country to be the healthiest in the world, he must learn that the “right” to good health requires as much effort, vigilance and cost as the support of any other right. And he had better become accustomed to the idea that it will be delivered in a different—not necessarily better—way than he has known before.—*D.E.G.*

## Along the Bookshelf

### *Clendening Medical Library*

#### RECENT ACQUISITIONS

- American Social Health Association. Today's VD control problem—1971. New York, 1971.
- Baldry, Peter Edward. The battle against heart disease; a physician traces the history of man's achievements in this field for the general reader. Cambridge, England, University Press, 1971.
- Barondess, Jeremiah A. Diagnostic approaches to presenting syndromes. Baltimore, Williams & Wilkins, 1971.
- Berens, Conrad. Diagnostic examination of the eye; step-by-step procedure. Philadelphia, Lippincott, 1964.
- Cohen, David D. Anesthesia for outpatient surgery. Springfield, Illinois, Thomas, 1970.
- Diehl, Harold Sheely. Tobacco & your health; the smoking controversy. New York, McGraw-Hill, 1969.
- Frazier, Claude Albee. Should doctors play God? Nashville, Broadman Press, 1971.
- Greenhill, Jacob Pearl. Office gynecology. Chicago, Year Book Medical Publishers, 1971.
- Hanlon, John Joseph. Design for health; school and community. Philadelphia, Lea & Febiger, 1971.
- Harris, Raymond. The management of geriatric cardiovascular disease. Philadelphia, Lippincott, 1970.
- International Symposium on Pharmacological Treatment in Burns, Milan, 1968. Proceedings . . . Under the auspices of the Italian Ministry of Health. Amsterdam, Excerpta Medical Foundation, 1969.
- Labat, Gaston. Regional anesthesia; techniques and clinical applications. Philadelphia, Saunders, 1967.
- Miles, Thomas Richard. On helping the dyslexic child. London, Methuen Educational, 1970.
- Naclerio, Emil Anthony. Chest injuries; physiologic principles and emergency management. New York, Grune & Stratton, 1971.
- Paschkis, Karl Ernst. Clinical endocrinology. New York, Hoeber, 1967.
- Rossmann, Isadore. Clinical geriatrics. Philadelphia, Lippincott, 1971.
- Stock, J. P. P. Diagnosis and treatment of cardiac arrhythmias. London, Butterworths, 1970.
- Wallenfels, Herman G. Hearing aids for nerve deafness. Springfield, Illinois, Thomas, 1971.
- Waltz, Jon R. Medical jurisprudence. New York, Macmillan, 1971.



## *Personalities*—IN KANSAS MEDICINE

Kansas physicians inducted as new Fellows of the American College of Surgeons in cap and gown ceremonies during the annual Clinical Congress held in Atlantic City in October were: **Clarence A. Gilmore** and **Lawrence L. Tretbar** of Kansas City, and **Dillis L. Hart**, **Charles B. Jenney** and **Gerald D. Nelson** of Wichita.

**Jack G. Phipps**, Wichita, was elected to the National Board of Directors of the American Academy of Family Physicians at the annual meeting of the Academy held in Miami, Florida, in October.

**Jesse D. Rising**, chairman of the department of postgraduate education and director of continuing education at KUMC, was the featured lecturer at a three-day symposium held by the Spanish Society for Medical Education at the Universidad Complutense School of Medicine in Madrid. The conference was in September.

**Ray E. Allen**, Liberal, participated in the annual Cardiovascular Symposium sponsored by the Great Plains Region, American Heart Association, held in Omaha in September. His topic was, "Prevention of Rheumatic Heart Disease."

New members were named and officers were re-elected at the meeting of the advisory group of the Southeast Region of the Kansas Regional Medical Program in Chanute. Members named to the group for three-year terms include **G. B. Athy**, Columbus; **Thomas Daugherty**, Garnett; and **James D. Gough**, Chanute. **John Coyle**, Coffeyville, was elected vice chairman.

**Tom A. Montgomery**, Sabetha, has been re-elected chairman and **DeWitt S. Lowe**, Hiawatha, vice chairman of the governing board of the Kansas Mental Health and Guidance Center.

**George Zubowicz**, Osawatomie, was elected president of the National Association for Medical Superintendents of Mental Hospitals at the association's annual convention in Seattle in September. Dr. Zubowicz has also recently been appointed special consultant to the National Institute of Mental Health on hospital psychiatry and administration.

**F. I. Stuart**, Atchison, retired on September 30, after 62 years of practicing medicine.

**Dr. and Mrs. Harold L. Patterson** of Larned began a three-month tour of duty in Afghanistan in September. This is their second trip to the Southwest Asia country and is in conjunction with the MEDICO program.

**John F. Coyle**, El Dorado, became president of the Kansas Heart Association at the annual meeting of the association held in Salina in September. **Sherman Steinzeig**, Shawnee Mission, was re-elected to the Board of Directors.

**Dale E. Darnell** has completed a four-year fellowship at Baylor University and is joining a clinic of orthopedic surgeons in Kansas City, Missouri.

**Thomas M. Holder**, associate professor at KUMC, presided at an open meeting of the Section on Surgery at the 40th annual meeting of the American Academy of Pediatrics in Chicago last month.

Governor **Robert Docking** has appointed **L. William Halling**, Hays, to the Advisory Laboratory Commission to the State Board of Health.



KANSAS STATE DEPARTMENT OF HEALTH  
TOPEKA, KANSAS

Epidemiology & Disease Control Services—Registration & Health Statistics Services—Kansas Morbidity  
Incidence  
Summary of Cases Reported in August, 1971 and 1970

<i>Diseases</i>	<i>August</i>			<i>January-August Inclusive</i>		
	<i>1971</i>	<i>1970</i>	<i>5-Year Median 1967-1971</i>	<i>1971</i>	<i>1970</i>	<i>5-Year Median 1967-1971</i>
Amebiasis .....	—	5	1	16	17	12
Aseptic meningitis .....	1	10	1	8	18	8
Brucellosis .....	—	—	—	1	1	1
Diphtheria .....	—	—	—	—	—	—
Encephalitis, prim., infect. ....	—	—	1	7	10	7
Encephalitis, post-infect. ....	1	—	—	6	—	2
Gonorrhea .....	788	655	577	4,761	4,452	3,305
Hepatitis, infectious .....	50	29	27	457	322	269
Measles (Rubeola) .....	1	1	*	1,386	69	*
Meningococcal meningitis .....	1	—	—	25	5	14
Mumps .....	—	—	*	770	139	*
Pertussis .....	3	2	2	11	2	4
Poliomyelitis .....	—	—	—	—	—	—
Rheumatic fever .....	—	—	—	1	4	3
Rubella (German Measles) .....	1	—	*	611	51	*
Salmonellosis .....	59	34	34	406	151	151
Scarlet fever .....	—	1	—	44	71	44
Shigellosis .....	51	8	8	703	55	55
Streptococcal infections .....	28	102	102	2,915	3,029	1,999
Syphilis .....	145	112	112	977	901	901
Tinea capitis .....	1	1	1	12	21	31
Tuberculosis .....	13	16	19	106	141	144
Tularemia .....	1	—	1	3	1	3
Typhoid fever .....	—	—	—	—	—	—

\* Statistics not available for 5-year median.

### INFLUENZA VACCINE

Influenza occurs in the United States every year, but the incidence and geographic extent vary widely. Periodically, it appears in epidemic form as a result of antigenic variation in prevalent viruses and the relative susceptibility of the population. Both type A and type B influenza viruses undergo antigen changes. Antigen shifts usually occur slowly, but occasionally they are rapid and abrupt.

Inactivated influenza vaccines have not been used to control epidemic influenza in the general population. Their effectiveness is variable, and protection is relatively brief. Nevertheless, since they are the only available influenza preventives, they should be given to chronically ill patients and possibly to older persons in general.

Strains of influenza A examined in the United States and abroad in 1970-71 did not differ significantly from the Hong Kong strain, A2/Aichi/-

2/68. For 1971-72, the composition of the vaccine will remain the same as the bivalent vaccine recommended for 1970-71.

Highly purified vaccines will be available from most manufacturers. These vaccines are equivalent in potency to earlier vaccines, but since they contain less nonviral protein, they are the recommended products where available.

#### GENERAL RECOMMENDATIONS

Annual vaccination is recommended for persons who have chronic debilitating conditions: (1) congenital and rheumatic heart disease; (2) cardiovascular disorders; (3) chronic bronchopulmonary diseases; (4) diabetes mellitus and other chronic metabolic disorders.

Although the value of routinely immunizing all older age persons is less clear, those patients who have incipient or potentially chronic disease, particularly affecting cardiovascular and bronchopulmo-

nary systems, should also be considered for annual immunization.

#### SCHEDULE

The primary series consists of 2 doses administered subcutaneously, preferably 6 to 8 weeks apart. (Dose volume for adults and a detailed schedule for children are specified in the manufacturer's labeling.) Persons who have had 1 or more doses of vaccine containing the Hong Kong strain antigen (all influenza vaccines since 1968-69) need only a single subcutaneous booster dose of bivalent vaccine. All others should receive the full primary series. Vaccination should be scheduled for completion by mid-November.

#### PRECAUTIONS

Influenza vaccine is prepared from viruses grown in embryonated eggs and ordinarily should not be administered to persons clearly hypersensitive to egg protein, ingested or injected.

### KAFP OFFICERS 1971-72

The election of officers for the Kansas Chapter, American Academy of Family Physicians was held in September. Please clip the listing below and attach to page 10 of your 1971 Membership Directory.

#### KANSAS CHAPTER

##### AMERICAN ACADEMY OF FAMILY PHYSICIANS

President—J. Warren Jacks, Pratt  
 President-Elect—John D. Huff, Kansas City  
 Vice President—Richard Brummett, Neodesha  
 Secretary-Treasurer—Alex C. Mitchell, Lawrence  
 Delegates to KMS—Jack G. Phipps, Wichita; Norman H. Overholser, El Dorado  
 Alternates—John Blank, Hutchinson; Lawrence E. Leigh, Overland Park

### AMERICAN PHYSICIANS ART ASSOCIATION

Physicians are invited to become members of the national nonprofit organization which is dedicated to furthering art interests of the medical profession; to broadening the physician's knowledge and appreciation of the past and present; to stimulating physician-artists to produce works of art in the fields of painting, sculpture, photography, graphic arts, design and creative crafts; to holding a national annual exhibition of physicians' art works; and to stimulating regional art exhibitions of physicians' works at local, state and specialty meetings.

The art exhibit is held annually in conjunction with the annual meeting of the American Medical Association. The APAA has a membership which extends across the entire United States, Canada and Lat-

in America. Every state is represented through a regional director. It is the hope of the APAA to establish a central photographic archive of its members' art works, to be used for year around press and magazine publicity in the physicians' home towns as well as nationally.

A physician does not necessarily have to be currently engaged in any art activity to become a member. The support of anyone interested in furthering physicians' art in America is welcomed.

Anyone interested in becoming a member, or desiring further information, please contact the President of APAA, A. M. Gottlieb, M.D., 3801 Miranda Avenue, Palo Alto, California 94304.

## NEW MEMBERS

*The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.*

Angela C. Arenal, M.D.  
 Bethany Hospital  
 Kansas City, Kansas 66102

Edward C. Defoe, M.D.  
 K. U. Medical Center  
 Kansas City, Kansas 66103

Luis Arenal, M.D.  
 2510 Strong Avenue  
 Kansas City, Kansas 66106

Arlo S. Hermrick, M.D.  
 K. U. Medical Center  
 Kansas City, Kansas 66103

Sidney A. Blubaugh, M.D.  
 K. U. Medical Center  
 Kansas City, Kansas 66103

Newton C. McCluggage, M.D.  
 9119 West 74th, Suite 107  
 Shawnee Mission, Kansas 66204

Robert P. Carrell, M.D.  
 Maricopa County Hospital  
 Phoenix, Arizona 85008

Enrique Palacios, M.D.  
 K. U. Medical Center  
 Kansas City, Kansas 66103

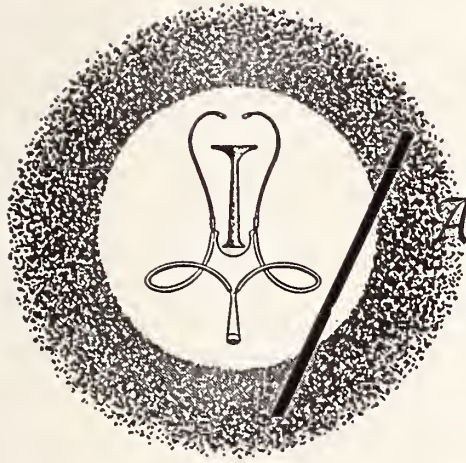
Meade O. David, III, M.D.  
 522 North Armour  
 Wichita, Kansas 67206

Curtis T. Todd, M.D.  
 K. U. Medical Center  
 Kansas City, Kansas 66103

## Journal on Microfilm

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## Announcements

*Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. Notice of the session is posted in advance to allow the physician time to make preparations.*

The Maternal and Child Health Program of the University of California School of Public Health at Berkeley announces postgraduate courses of instruction for pediatricians, obstetricians, and other physicians interested in receiving training in the field of Maternal and Child Health. These programs all lead to the degree of Master of Public Health. Tax-exempt Fellowships are available, consisting of support for the trainee and his dependents, tuition and fees.

Program areas available at the present time include nine-month programs in Maternal and Child Health, Health of School-Age Children and Youth, and Maternal Health and Family Planning. Twenty-one month programs in Care of Handicapped Children, Comprehensive Health Care and Perinatology are available. Fellowships are available for these programs also.

Applications are now being accepted for the group entering September 1972. For information, write to Helen M. Wallace, M.D., School of Public Health, University of California, Berkeley, California 94720.

### NOVEMBER

**Nov. 18**      **One-day seminar for physicians, *Newer Concepts in Acute and Chronic Pulmonary Diseases in Adults and Children*, Burton Auditorium, Wesley Medical Center, Wichita.**

**Nov. 19**      **Physician's symposium on *Arthritis in the Young*, arranged by the Kansas Chapter, Arthritis Foundation, St. Francis Hospital School of Nursing Auditorium, Wichita. The symposium will begin at 9:30 a.m. and is certified by the AAGP for 3 hours prescribed and 1 hour elective credit.**

**Nov. 28-  
Dec. 1**      **25th clinical Convention, American Medical Association, Jung Hotel, New Orleans.**

### DECEMBER

**Dec. 4-9**      **American Academy of Dermatology, 30th annual meeting, Palmer House, Chicago. For information write Frederick F. J. Kingery, M.D., Secretary-Treasurer, 2250 Northwest Flanders Street, Portland, Oregon 97210.**

### POSTGRADUATE EDUCATION

**University of Kansas:**

**Nov. 17-19**      ***Medical Technology***

**Dec. 6-8**      ***Gynecology and Obstetrics***

**For further information on the above courses write the Department of Postgraduate Medical Education, University of Kansas School of Medicine, Kansas City, Kansas 66103.**

**University of Missouri-Columbia School of Medicine:**

**Nov. 17-18**      ***Problems of the Eye: Intrinsic and Systemic Diseases***

**For further information on the above courses, write the Conference Section, Continuing Medical Education, M-175 Medical Center, Columbia, Missouri 65201.**

**A syllabus, *Clinical Oncology*, is available to interested physicians by requesting it from the American Cancer Society, Kansas Division, Inc., 824 Tyler, Topeka, Kansas. This book is a multidisciplinary approach to cancer education, and presents a good overview of knowledge regarding malignant disease. It is presented in outline form.**

# Woman's Auxiliary

## *. . . Auxiliary Annie Sets Out to Trim You (Down, That Is)*

People who live in glass houses should dress in the dark . . . at least the too fat or too skinny ones should.

Now, why did we bring that up right in the middle of the holiday eating season? Because one of the things that the auxiliary is stressing is health education, that's why. Physical fitness is part of this.

Too many people, doctors and their wives included, get far too little exercise, especially those in the middle years. They have a tendency to sit too much, eat too much and burn too few calories, leaving the rest behind on that same portion of their anatomies.

We're not proposing that you diet, particularly. We'd rather you ate those good, balanced meals and enjoyed them. If you want to cut down a bit, or eliminate starches or fats or something for awhile, fine. What we do want you to do is to keep all the areas of physical fitness in mind. That's quite an order, because there are many auxiliary projects and suggestions that include physical fitness.

Here's an idea of what auxiliaries across the nation are doing. First, there's the obvious educational programs using posters, films, panels or even a working display like "Smoking Sam" the smoking manikin. A little less obvious are projects that educate the public on things ecological, areas of mental health and safety, to name a few. You never thought that these were a part of physical fitness, did you? They all contribute to the state of your health. Swimming classes not only teach water safety, they're good for you. Many auxiliaries sponsor these along with their Red Cross. A city-bound California auxiliary formed

a hiking club and hikes at least two miles up into the hills surrounding their city each week.

Auxiliaries have a two-fold direction. We try to educate the public and ourselves to health matters, then we often carry out this education in projects that alleviate the problems. For instance, Ford and Flint Hills counties made hygiene kits for migrant workers' children. Sedgwick bought 50 subscriptions to "Today's Health" for Wichita schools, and Shawnee had a GEMS babysitting training program. Wyandotte went a little farther and had a speaker on "self protection for women." If that isn't helping to keep physically fit, nothing is! In the past, counties have sponsored defensive driving classes or driver refresher courses.

A little farfetched for "physical fitness" you say. Maybe. But have you ever had asthma from smog in an industrial center, been hurt in an automobile accident or seen accidents that happened because of an untrained baby sitter?

For your own health's sake, watch what you eat, drink or do. (Annie's daughter informed her "that if we are what we eat, then I'm a can of Slender.") Mostly we're trying to say that we care about you. We care about the public, too, so we work at projects like physical fitness.

Time's up. The lecture is over. But first a few words from your sponsor . . . "When you go eat that snack, remember, old dear/A calorie in the hand is worth two on the rear!" (This column will self-destruct in three seconds.)

Annie

*To train the doctors of tomorrow,  
medical education needs your help today*

.....\*

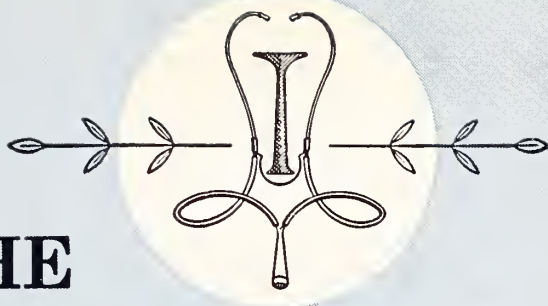
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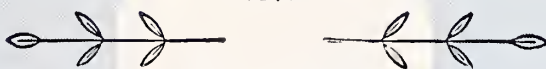




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NO. XII



# Patients fell asleep quick

Dalmane (flurazepam HCl) 30 mg reduced awake time—both before and after falling asleep - by fifty percent of pretreatment values in patients with insomnia.<sup>1,2</sup>

Two sleep laboratory studies recently confirmed findings of earlier studies of this type, namely, that Dalmane 30 mg was effective in patients who had trouble falling asleep, staying asleep or both. One 30-mg capsule of Dalmane usually induced sleep within 22 minutes, decreased the number of awakenings and the wake time after the onset of sleep, and provided 7 to 8 hours of sleep without need to repeat dosage during the night.

These studies utilized identical protocols and included eight insomniac patients. Sleep laboratory measurements in a limited number of patients are derived from all-night electroencephalographic, electro-oculographic and electromyographic tracings. Unlike traditional methods of evaluation, they are quantitative, reproducible and projectable to large numbers of subjects.

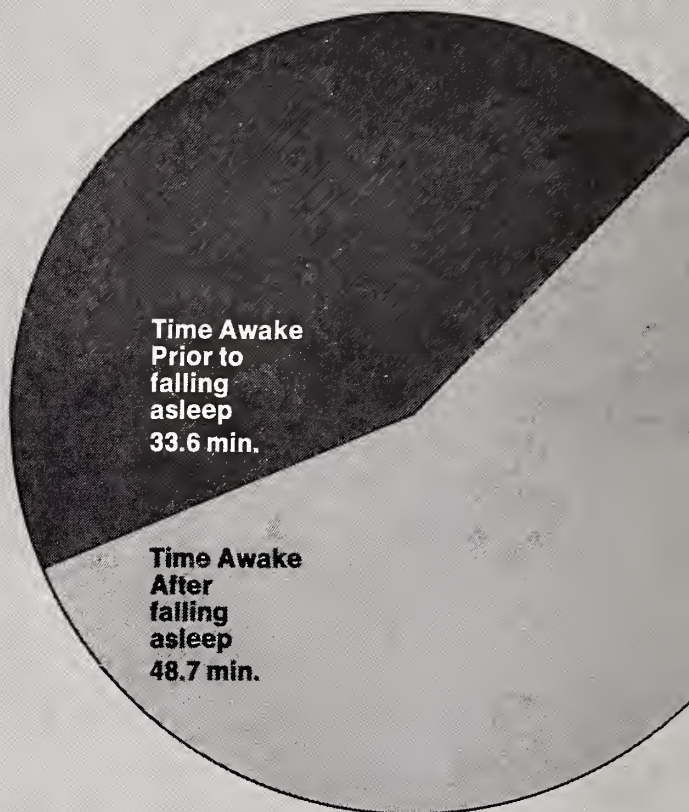
Results shown represent average values in all subjects for the three consecutive nights of placebo administration prior to Dalmane therapy and the seven consecutive nights on Dalmane 30 mg.

Dalmane is also relatively safe, as reported in clinical studies. Instances of morning "hang-over" have been relatively infrequent; paradoxical reactions (excitement) and hypotension have been rare. Dizziness, drowsiness, lightheadedness and the like were the side effects noted most frequently, particularly in the elderly or debilitated. (An initial dose of Dalmane 15 mg should be prescribed for these patients.)

**References:** 1. Frost, J. D., Jr.: "A System for Automatically Analyzing Sleep," Scientific Exhibit presented at Clinical Convention, A.M.A., Boston, Nov. 29-Dec. 2, 1970, and Aerospace M.A., Houston, April 26-29, 1971.

2. Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley, N.J.

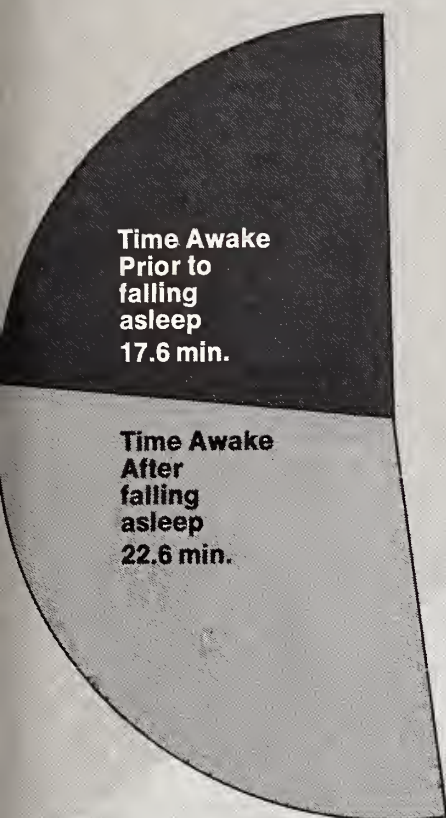
Before  
Dalmane  
(flurazepam HCl)





# and slept through the night

On  
Dalmane  
flurazepam HCl)



Large sleep laboratory measurements in cited studies

Parameter	Before Dalmane	On Dalmane
Time required to fall asleep	33.6 min.	17.6 min.
Time after onset of sleep	48.7 min.	22.6 min.
Number of wakeful periods after onset of sleep	12.2	8.4
Total sleep time	420.0 min.	447.5 min.
Percent sleep	88.6	94.5

clinical effectiveness as  
shown in the sleep laboratory

**Dalmane®**  
flurazepam HCl)

30-mg capsule h.s.—usual adult dosage.

15-mg capsule h.s.—initial dosage for  
elderly or debilitated patients.

**Before prescribing Dalmane (flurazepam HCl), please consult Complete Product Information, a summary of which follows:**

**Indications:** Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; and in acute or chronic medical situations requiring restful sleep. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended.

**Contraindications:** Known hypersensitivity to flurazepam HCl.

**Warnings:** Caution patients about possible combined effects with alcohol and other CNS depressants. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Use only in women who are or may become pregnant when potential benefits have been weighed against possible hazards. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage.

**Precautions:** In elderly and debilitated, initial dosage should be limited to 15 mg to preclude oversedation, dizziness and/or ataxia. If combined with other drugs having hypnotic or CNS-depressant effects, consider potential additive effects. Employ usual precautions in patients who are severely depressed, or with latent depression or suicidal tendencies. Periodic blood counts and liver and kidney function tests are advised during repeated therapy. Observe usual precautions in presence of impaired renal or hepatic function.

**Adverse Reactions:** Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported were headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins and alkaline phosphatase. Paradoxical reactions, e.g., excitement, stimulation and hyperactivity, have also been reported in rare instances.

**Supplied:** Capsules containing 15 mg or 30 mg flurazepam HCl.



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# The JOURNAL of the KANSAS MEDICAL SOCIETY

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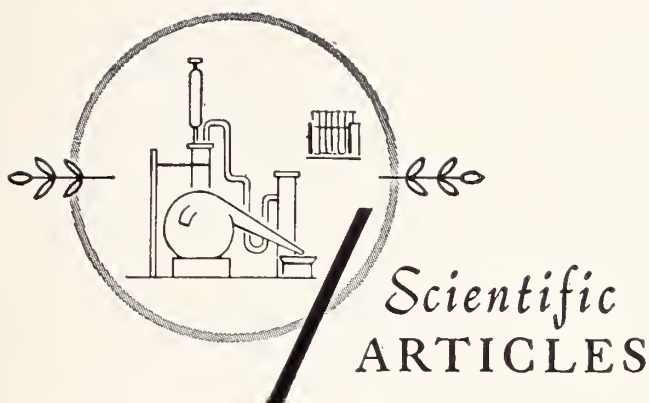
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# Aneurysms—Emergencies

## *Ruptured Aneurysms of the Abdominal Aorta*

DON R. MILLER, M.D.,\* *Kansas City, Kansas*

WITHIN the past 20 years, ruptured aneurysm of the abdominal aorta, an almost universally fatal, untreated catastrophe, has become a surgically correctable problem with an acceptable operative mortality rate. The reported operative mortality (*Table 1*), ranging from 34 to 82 per cent and averaging about 50 per cent, is high and will remain significant because of the sudden and unexpected nature of the shock and blood loss from this major vessel. Since recent series of ruptured aneurysms have not shown the same improvement in mortality which has been seen with elective aneurysmectomy, some believe that future improvement in the mortality rate cannot be expected.<sup>7, 27</sup> Gaspar<sup>14</sup> and Mannick,<sup>23</sup> however, are optimistic that further reduction in operative mortality can be accomplished.

Nevertheless, the large difference in mortality rate associated with operation for ruptured as opposed to elective operation for intact aneurysms clearly points up the necessity for diagnosis and correction of aneurysms prior to rupture.<sup>3, 7</sup> Baker, et al.<sup>3</sup> recently reported a series of over 100 elective abdominal aneurysmectomies without a death.

Improvements in recognition, preoperative, operative and postoperative management of these extreme-

ly difficult cases have permitted salvage of the last eight patients of a total of ten (80 per cent) operated upon by the author with ruptured aneurysms since

---

**Ten patients have been operated upon for ruptured abdominal aortic aneurysm with an operative mortality of 20 per cent. This improvement in mortality rate is believed related to improved methods of resuscitation, technical factors in rapid control of bleeding and replacement of the aneurysm, and management of postoperative complications which have been many and severe.**

**Pertinent literature has been cited.**

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1958. While the number of cases in this series is relatively small, a review of this experience is believed pertinent to outline factors important in successful management that may further improve survival.

### **Case Material**

All patients were operated upon at the University of Kansas Medical Center and had abdominal aortic

---

\* From the Department of Surgery, University of Kansas Medical Center, Kansas City, Kansas.

TABLE 1  
MORTALITY FROM RUPTURED ANEURYSM  
AS REPORTED BY OTHERS SINCE 1963

Year	Authors	Number of Patients	Mortality (Per Cent)
1964	DeBakey <i>et al</i> <sup>12</sup> .....	120	34
1964	Hardin <sup>18</sup> .....	12	75
1964	Mannick <i>et al</i> <sup>23</sup> .....	25	32
1964	Sanger <i>et al</i> <sup>26</sup> .....	16	44
1965	Martin <sup>24</sup> .....	17	71
1966	Coles <i>et al</i> <sup>8</sup> .....	74	48
1966	Lawrence <i>et al</i> <sup>22</sup> .....	65	52
1966	Szilagyi <i>et al</i> <sup>28</sup> .....	79	58
1966	Blaisdell <sup>5</sup> .....	24	67
1967	Christiansen & Mouridsen <sup>7</sup> .....	11	73
1967	Kouchoukos <i>et al</i> <sup>21</sup> .....	36	61
1968	Graham <i>et al</i> <sup>15</sup> .....	107	54
1968	Gwinn & Oury <sup>16</sup> .....	11	82
1969	Stoney <i>et al</i> <sup>27</sup> .....	44	50
1970	Van Heeckeran <sup>29</sup> .....	57	60
1970	Hall <i>et al</i> <sup>17</sup> .....	20	70
1970	Alpert <i>et al</i> <sup>1</sup> .....	40	43
1971	Present series .....	10	20

aneurysm not involving renal vessels and frank retroperitoneal hemorrhage which at times had ruptured into the peritoneal space. No case could be classified as expanding or early dissection, lesions in which operative mortality rate is comparable to elective resection.

One patient was currently in the University of Kansas Medical Center because of hypertensive cardiovascular disease with congestive heart failure at the time of aneurysmal perforation and operative intervention was accomplished within one and one-half hours. Although he recovered fully from the operation, continued congestive heart failure led to his demise unrelated to the aneurysm two months after operation while he was still hospitalized. All other perforations occurred prior to hospitalization and several hours or days had elapsed prior to admission to this hospital. All except one patient were transported from 50-200 miles to this hospital.

The first two patients in the series operated upon in 1958 and 1959 each had been previously operated upon by others for mistaken diagnoses two hours and ten hours previously. Each of these patients expired at operation, one from irreversible shock and cardiac arrest and the other from shock following massive hemorrhage. Technical difficulty in gaining control of the proximal aorta caused by massive fresh retroperitoneal hematoma which obscured the proximal

aorta was an important contributory factor in one patient.

The remaining seven patients left the hospital and are alive two months to eight years postoperatively.

All patients were Caucasian, and there was only one female. The average age was 64.4 years.

Two cases are presented in detail as examples of the clinical picture, nature and severity of postoperative complications, and their management:

CASE ONE

This 63-year-old white male had the sudden onset of nausea, vomiting, and pain in the right groin. The pain increased in severity, radiated to his back and was followed by collapse, sweating, and restlessness. His primary physician made the diagnosis of ruptured abdominal aneurysm, started fluids, and transferred him to the University of Kansas Medical Center some 200 miles away.

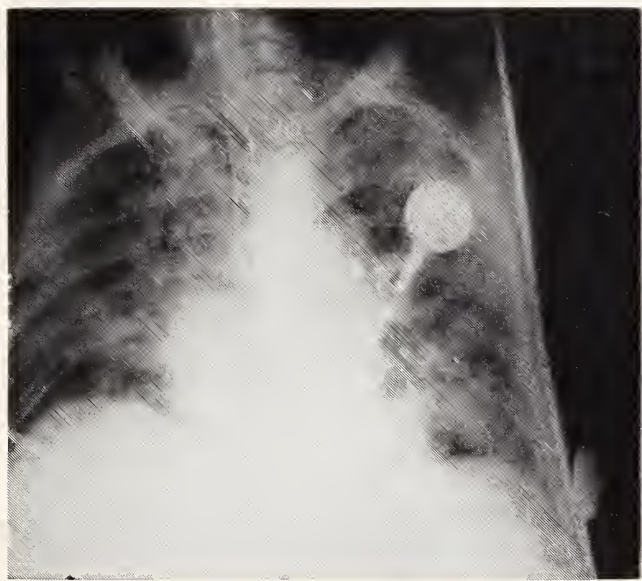
Upon arrival here, the patient was ashen in color, restless, but oriented. The blood pressure was 60/40, the pulse 140, and respiration 24. There was slight abdominal distension with a pulsatile mass measuring approximately 8 centimeters in width just above the umbilicus with diffuse abdominal tenderness. The femoral pulses were weak but present.

The hemoglobin was 13.9 gram per cent; white blood count was 16,600 with a shift to the left. The patient was taken immediately to the operating room where the abdomen was draped and the patient prepared for anesthesia. As soon as bank blood was available, anesthesia was induced, followed immediately by the absence of obtainable pulse and blood pressure, and the abdomen was quickly entered through a long midline incision. A large retroperitoneal hematoma was obvious, and there was no pulsation palpable in the subdiaphragmatic aorta. The aorta was immediately compressed subdiaphragmatically and blood was administered by the anesthesiologist, followed by a return of pulse and gradually rising blood pressure. An attempt to clamp the aorta in the subdiaphragmatic area resulted in only partial occlusion, and the large hematoma in the right iliac fossa continued to enlarge and eventually burst. The large aneurysm was immediately opened, and the left thumb was inserted into the aortic lumen at the proximal end of the aneurysm. This immediately controlled the bleeding until further resuscitation and transfusion was done. The aorta was then easily isolated about the thumb and an occluding vascular clamp applied in the subrenal area. The large hematoma in the right flank was then evacuated. The iliac vessels were isolated and occluded distal to the aneurysm. The aneurysmal contents were removed and a dacron knitted graft sewn into the defect. The aorta was clamped for a period of 90 minutes. During much of



the procedure, the anesthesiologist was unable to obtain a blood pressure. Near the termination of the procedure, a blood pressure of 130 was accomplished by the use of additional blood. The urinary output had been small. The patient received mannitol and 4 liters of blood during the course of the operative procedure. At the termination, the pulses in the feet were satisfactory. The patient was transferred to the intensive care unit in satisfactory condition.

Postoperatively, the vital signs were stable, and the urinary output was satisfactory the first day. However, during the first postoperative night he became restless, confused, and cyanotic. Bilateral infiltrates of the lung were noted. His condition continued to deteriorate and required endotracheal intubation and respiratory assistance. The x-ray appearance suggested pulmonary edema or microembolism syndrome (*Figure 1*). On the second postoperative day, he be-



*Figure 1.* Chest film on first postoperative day. Note diffuse bilateral pulmonary infiltrates, indicative of pulmonary microembolism syndrome.

came disconnected from the respirator and, although it was immediately replaced, cardiac arrest occurred. Resuscitative measures brought prompt return of cardiac function. He required 90 to 100 per cent oxygen for several days to maintain adequate peripheral oxygenation. Prolonged ileus was present. On the ninth postoperative day, an abdominal mass was present in the right flank and, because of continued ileus and the abdominal mass, re-exploration was done with findings of a large retroperitoneal hematoma. Respiratory assistance was maintained in the intensive care unit for 17 days. A tracheostomy was done after three weeks because of the patient's inability to clear tenacious tracheal secretions. Significant hypernatremia with marked disorientation was evident at this time.

The hypernatremia responded promptly to treatment. Wound infection, followed by disruption, occurred three weeks postoperatively and required operative closure with through-and-through stitches. Because of difficulty in swallowing, tube feeding was required. The respiratory status slowly improved until the tracheostomy tube could be removed one month postoperatively. It was only at this time that the patient's normal preoperative mental clarity became apparent. He was dismissed five weeks after his original operation.

#### CASE TWO

This 72-year-old white male began having low back pain radiating into the inguinal area and scrotum three days prior to admission. He was admitted to a community hospital for suspected kidney stone. The pain was relieved by medications and had shown marked improvement for three days when he developed the sudden onset of severe low back pain associated with lower abdominal pain and distension three and one half hours prior to admission here. A previous perforated ulcer 30 years before suggested this diagnosis to his referring physician. He had vomited on one occasion. Past history included chronic obstructive pulmonary disease, congestive heart failure, and hypertension. The patient had had marked dyspnea on exertion. Physical examination here showed the blood pressure to be unobtainable. Although he was awake and reacting, the skin was cool, clammy, and diaphoretic. There were generalized wheezes and ronchi throughout the lungs. Heart tones were distant. The abdomen showed marked distension with tenderness to palpation and absent bowel sounds. There were no flank or abdominal masses palpable. Intravenous fluids were started in the emergency room. A nasogastric tube was inserted, and he was immediately taken to the operating room.

At the operating room, the systolic blood pressure varied from 30 to 60, and immediately prior to operation, no blood pressure was obtainable. The abdomen was swiftly opened at the time of induction, and there was immediately apparent a large amount of blood in the peritoneal space and pelvis. No aortic pulsation was present, and manual compression of the aorta was established. Rapid transfusion elevated the systolic blood pressure to 80 to 90. There was an anterior aortic perforation as well as a large retroperitoneal hematoma. A finger was placed temporarily over the anterior perforation, and the left thumb was then inserted directly into the aneurysmal wall and placed up into the neck of the aneurysm, completely occluding blood flow. It was then easy to apply a vascular clamp to the neck of the aneurysm over the thumb. A bifurcated graft was then fashioned and sewn into place after removal of the aneurysmal con-

tents. The patient received 14 units of blood during the procedure. At the time of leaving the operating room, the blood pressure was 130/80. He received 12.5 grams of mannitol during the course of the operation in addition to the blood. The aorta was cross-clamped approximately one hour. Twelve hours postoperatively mild hypotension occurred, and the abdomen was increasingly distended. Anuria was present. The patient was re-explored for bleeding because of the abdominal distension; however, minimal free blood was found, and the retroperitoneal area appeared to be intact so the graft was not exposed. Anuria persisted. Ureteral obstruction was ruled out by retrograde pyelography. By the fourth postoperative day, the BUN had risen to 100. An atrioventricular (AV) shunt was inserted for hemodialysis which was then done on the fifth postoperative day and at subsequent intervals. The patient was maintained on respiratory assistance through a tracheostomy. Renal arteriography was done to rule out arterial obstruction. Findings were consistent with acute tubular necrosis. The patient continued to have bronchospasm with arterial pO<sub>2</sub> 69 millimeters and a pCO<sub>2</sub> 68 millimeters. Anuria persisted for nine days. On the tenth postoperative day, the urinary output was 40 milliliters. Urinary output gradually increased and was greater than 400 cubic centimeters on the fifteenth postoperative day. Hemodialysis was continued. Urinary output on the eighteenth postoperative day was 1300 cubic centimeters. Continuous ventilatory support was discontinued on the sixteenth postoperative day although the tracheostomy was maintained. The BUN remained at 132 milligram per cent, creatinine 14.1 milligram per cent. *Serratia* infection in the blood and urinary tract necessitated the use of gentamycin to which the organism was sensitive. Catheter drainage was maintained, and because of prostatism was continued at the time of his dismissal from the hospital on the forty-fifth postoperative day when

the BUN was 92 milligram per cent. The highest BUN of 156 milligram per cent had been recorded at the twenty-fourth postoperative day. The patient had some residual weakness of the lower extremities believed to be related to cord ischemia during the extended period of preoperative shock and aortic clamping. By two months postoperation, the BUN had fallen to 70 milligram per cent, and the patient remained well although on urinary catheter drainage.

Patients and pertinent data are tabulated in *Table 2*.

Symptoms

Many patients had symptoms of abdominal, back, or limb pain for several weeks before the onset of the acute symptoms of rupture of the aneurysm. After perforation occurred, there was the sudden onset of excruciating pain in the abdomen, flank, or back in all patients often associated with shock, sweating, and hypotension. After the initial episode symptoms usually were noted to improve only to recur hours or days later, as the clot extended. Acute symptoms had been present an average of four days before admission here. The natural history has been well described in the paper by Barratt-Boyes.<sup>4</sup>

The cardinal signs of ruptured abdominal aneurysm are severe pain, pulsating mass, and shock. The initial diagnosis was in error in most of our patients and led to significant delay in referral for treatment. Two patients were operated upon for severe pain prior to transfer to the general surgical service—one with the diagnosis of perinephric abscess. Another patient was being treated for renal stone with flank pain when he developed shock, and was then believed to have had a perforated peptic ulcer. A pancreatic cyst was diagnosed in another patient prior to abdominal films which showed a large aneurysmal mass which led to his transfer here. Acute symptoms developed after trauma in two patients.

TABLE 2

	Age	Year	Blood Pressure on Admission	Duration of Symptoms	Size of Aneurysm	Operative Findings: Aortic Pulse	Type of Graft Used	Operative Trans-fusions (L.)	Postoperative Complications	Postoperative Hospitalization
1	64	1958	100/60	8 days	large	0	S	10	Died at operation—Shock & Hemorrhage	Died
2	74	1959	100/60	6 days	massive	+	—	1.5	Died at operation—Shock	Died
3	57	1963	100/70	1½ hours	8 × 15 cm	+	S	5	Respiratory insufficiency	9 days
4	64	1967	100	1½ hours	large	+	Y	1.5	Respiratory insufficiency; Congestive heart failure; Oliguria	Died 2 months after operation—congestive heart failure
5	64	1969	140/80	7 days	large	0	Y	4.5	Atrial fibrillation; Congestive heart failure; Respiratory, wound disruption	12 days
6	66	1969	140/70	5 days	10 × 15 cm	+	Y	6.5	Renal insufficiency; Pulmonary consolidation	16 days
7	64	1970	90/70	2 days	10 × 20 cm	0	Y	7	Renal failure; Pulmonary insufficiency	21 days
8	63	1970	70/—	4 hours	large	0	S	4	Cardiac arrest; Pulmonary edema; Wound disruption; Respiratory insufficiency	37 days
9	72	1971	30/—	3 days	large	0	S	7	Renal insufficiency; Pulmonary insufficiency; Limb weakness	35 days
10	56	1971	70/—	7 days	large	+	S	5.5		12 days



Only one patient was known to have had an abdominal aneurysm before the onset of symptoms of rupture, but hypertension was known in several patients.

The white blood count was greater than 12,000 in all patients and was 38,000 in one patient. The hemoglobin was reduced below 10 grams in four patients.

All patients had manifestations of shock, and in eight of ten patients the systolic blood pressure was 100 or below. In five patients there was no palpable pulse in the aorta at the time the abdomen was initially opened.

### **Operative Findings and Management**

Induction of anesthesia was followed by a significant fall in blood pressure of ten patients, and the blood pressure remained low or unobtainable in four patients during much of the operative procedure. External cardiac massage was used in one.

The perforation resulted in free blood in the peritoneal space in five patients in addition to the large retroperitoneal hematoma which was present in all patients. In each the hematoma was extensive and frequently involved transverse and sigmoid mesocolons. It was usually impossible to recognize the exact site of perforation which was obscured by the hematoma.

The aorta was initially controlled by hand compression in three patients and by suprarenal clamping through the gastrohepatic ligament in six patients. Subrenal clamping was initially possible in only three patients.

At times it was impossible to know the precise size of the aneurysm because of distortion created by the extensive surrounding hematoma, but all were believed to be large, and several exceeded ten centimeters in diameter. Iliac aneurysms were also present in three patients.

Dacron knitted grafts were used in all patients and were preclotted and sutured in place with silk in early experience but later with polyethylene monofilament or dacron sutures. When it was possible to save the terminal aorta, a straight graft was used. This could be done in five patients.

The suprarenal clamp was removed to an infrarenal position as soon as feasible, but this was delayed beyond 30 minutes in two patients. Neither showed severe postoperative renal insufficiency. The thumb was inserted directly into the aorta in two recent patients when good proximal control could not be quickly gained with a clamp. This is an important technical advance permitting control of bleeding and rapid subrenal clamping.

During operation, an average of 5.25 liters of blood and liberal use of Ringers lactate solution was employed.

Intravenous mannitol was used during the operations in four recent patients. An increased urinary output was observed in two of these patients. The other two who had had oliguria and one with severe shock preoperatively had little or no urinary output during operation. One responded postoperatively with moderate rise in urinary output, and the other had anuria for nine days.

### **Complications**

Postoperative complications were common in survivors. Seven of eight survivors displayed pulmonary complications, and prolonged respiratory support was required in several. Pulmonary microembolism syndrome was observed in one patient.

### **Preoperative Preparation**

Once the diagnosis of ruptured abdominal aneurysm is made, or strongly suspected, the patient should be promptly transferred to a facility prepared for surgical intervention. Admission should be made directly to the operating room. Chest x-ray, sonogram, EKG, and routine laboratory tests are not required and may at times sufficiently delay operation so that death ensues. When free peritoneal perforation occurs, the only possible means of salvage is immediate operation and control of the aortic rent by clamp or compression. This can be done only in the operating room. Those accustomed to routine resuscitation in the emergency or hospital wards often do not realize the importance of this point.

Once in the operating room, with emergency operating packs open and instruments available, blood is drawn for typing and cross-matching, intravenous fluids started, central venous pressure catheter inserted, the patient is disrobed, and final preparation for operation is completed. One member of the surgical team has scrubbed and stands ready to hurriedly prep the abdomen and enter it should profound circulatory collapse intervene. The patient is not removed from the transporting litter to the operating table until blood is available in the room since the increased intravascular pressure induced by straining in moving may renew fatal bleeding. For the same reason, the nasogastric tube is inserted after induction.

### **Operative Technic**

At the last moment, anesthetic induction is begun. The abdomen is then opened through a long midline incision. The intestines are delivered from the abdomen and the diagnosis of ruptured aneurysm confirmed. The hand is placed on the aorta in the subdiaphragmatic position to detect pulsations. If the pulse is weak or imperceptible, the aorta is compressed against the spine and blood rapidly administered. If the pulse does not return in seconds, external cardiac

massage is begun immediately. Blood pressure then usually returns to acceptable levels, and the surgeon's hand can be replaced by a vascular clamp applied to the subdiaphragmatic aorta through the gastrohepatic ligament after careful blunt dissection of the anterior and lateral walls of the aorta to permit complete occlusion by the clamp.

Continued bleeding may occur from incomplete occlusion by the clamp, or retrogradely from the iliac vessels. Which of these sources is determined by then opening into the aneurysm, excavating rapidly the bulk of laminated clot, and internally occluding the orifices of the iliac vessels by the fingers. If bleeding stops, the iliac vessels are then hurriedly isolated with tapes and angled vascular clamps applied. Palpating the orifices helps to find the iliac vessels which may be otherwise hopelessly lost in the large retroperitoneal hematoma.

Care must be taken to avoid injury to the large iliac veins which are often densely adherent to the arteries. Under these circumstances, arterial clamping without complete posterior isolation may suffice and save valuable time.

If occlusion of the iliac orifices does not control the bleeding, or if continued proximal aortic leakage is uncontrolled, then bold incision into the aneurysmal wall and insertion of the left thumb directly into the proximal aorta feeding the aneurysm is necessary.<sup>6</sup> The thumb is usually the proper size to occlude the aorta and also serves as a guide to finding the neck of the aneurysm for easy isolation and subrenal clamping of the collapsed aorta.

If the subdiaphragmatic aorta has been clamped, it is necessary to then isolate the subrenal aorta and crossclamp it as soon as possible to permit removal of the subdiaphragmatic clamp to restore renal flow. Once the aorta is controlled, the remainder of the operation can proceed as the elective procedure with some notable points which need emphasis:

1. Removal of the entire aortic wall is unnecessary and endangers the vena cava and iliac vessels. Only the atherosclerotic intima need be removed posteriorly.<sup>9</sup>
2. Ureters are not isolated because isolation is made difficult by extensive hematoma. Dissection lateral to the midline should be minimized<sup>23</sup> and all tissues divided with extreme care.
3. The duodenojejunal junction is left reflected to the right and is never re-attached to its original retroperitoneal location overlying the aorta which now is the location of the aortograft anastomosis and a site for development of aortoduodenal fistula. The graft is covered by available areolar tissue and remnants of the muscularis and adventitia of the aneurysmal wall.
4. The inferior mesenteric artery should be ligated as closely to the origin as possible or, if large,

reimplanted into the aorta to avoid colonic ischemia.<sup>3</sup>

5. Major accessible retroperitoneal hematoma should be evacuated. Retention sutures should be used because of the length of the incision and the high incidence of pulmonary and abdominal complications in these patients.

## Discussion

The first elective replacement of an abdominal aortic aneurysm with homograft by Dubost<sup>13</sup> in 1952 was followed promptly by others<sup>2, 11, 20</sup> in this country who further developed technics which were soon applied to the ruptured aneurysm.<sup>19</sup> Javid, *et al.*<sup>19</sup> in 1955 reported 50 per cent survival in four cases operated upon for ruptured aneurysm.

Factors which contribute to the continuing high mortality rate with ruptured aneurysm have been analyzed in a number of previous reports.

As many as one half to two thirds of patients<sup>4, 27</sup> with ruptured aneurysms are asymptomatic prior to rupture; therefore, recognition and surgical removal of asymptomatic aneurysms is important.<sup>17</sup> Although most aneurysms are large at the time of rupture, 20 per cent of the series reported by Darling, *et al.*<sup>10</sup> were less than 7 centimeters in diameter. The mortality rate associated with elective removal has progressively decreased to less than 5 per cent in many series,<sup>3, 17, 27</sup> but the mortality rate is highest with large aneurysms.<sup>3</sup> The evidence then is good for the elective removal of even small asymptomatic aneurysms. The operation is well tolerated even by the aged.

Mannick and associates<sup>23</sup> relate their recent improvement in mortality rate with ruptured aneurysms to immediate operation, minimal operative dissection, and the use of intravenous mannitol. Profound shock in the preoperative period was a major factor affecting survival. The mortality rate was higher over age 70.

Baker, *et al.*<sup>3</sup> found technical factors directly or indirectly responsible for many deaths in their series of 390 patients electively operated upon for aneurysms. Hemorrhage and thrombosis caused two-thirds of the deaths prior to 1966. Peripheral vascular obstruction and aneurysmal size greater than 12 centimeters were also found to increase the hazards of aneurysmal operations. Technical factors stressed were increased speed in operation to reduce the overall operating time and aorta-clamp time, avoidance of repeated clamping and fragmentation of aortic plaques, preservation of collateral circulation, reimplantation of a large inferior mesenteric artery, systemic heparinization, proximal and distal flushing, and preservation of the posterior aortic wall. Pre-existing heart disease was not a major factor affecting mortality.

Hall and others<sup>17</sup> believed that the high mortality



rate with ruptured aneurysm relates to the inadequate preoperative preparation directed to other existing diseases which can be better controlled in elective cases.

Pulmonary microembolism syndrome<sup>5, 17</sup> has been observed in many patients with ruptured aneurysms and hemorrhagic shock. Systemic heparinization has been advocated to prevent this serious complication. Clinical features of the syndrome were seen in 14 patients reported by Blaisdell and associates<sup>5</sup> and were manifested by local shock, bleeding diathesis, respiratory insufficiency, and low cardiac output. Eighteen of the 31 deaths in 106 emergency operations for aneurysms or occlusive vascular disease were related to cardiopulmonary complications.

The importance of speed in gaining control of the proximal aorta has been stressed by many authors.<sup>23, 27, 36</sup> Crossclamping the thoracic aorta by thoracotomy has not been successful in preventing death<sup>19, 23</sup> and is not now advocated. The large hematoma often obscures the proximal aorta, and delays or makes control impossible. The approach of direct aneurysmal incision and intraluminal occlusion of the aortic root with the operator's thumb<sup>6</sup> may save valuable time and permit easy isolation of the aorta for infrarenal clamping in such instances. Other instruments have been devised for temporary proximal aortic occlusion.<sup>25</sup>

The use of endoaneurysmorrhaphy as described by Creech<sup>9</sup> instead of complete removal of the aortic wall has decreased operative time and reduces chances of troublesome and often uncontrollable hemorrhage from the cava or iliac veins.

A smooth anesthetic induction is important.<sup>23, 27</sup> Circulatory collapse associated with vasodilation often follows induction; therefore, induction of anesthesia should be delayed until blood is available and the surgeon is ready to make the incision.

The large number and severity of postoperative complications contributes significantly to the mortality rate. Prolonged ventilatory support is required in many patients, and careful attention must be paid to the renal status. Recurrent hemorrhage, prolonged ileus, wound infection, and problems in healing are common and must be dealt with vigorously when they appear.

## Addendum

Subsequent to the submission of this manuscript, case #2 has required hospitalization for acute and chronic renal failure secondary to obstructive uropathy and septic shock, and expired six months following aneurysmectomy.

## References

1. Alpert, J.; Brief, D. K. and Parsonnet, V.: Surgery for the ruptured abdominal aortic aneurysm. *JAMA* 212: 1355, 1970.
2. Bahnson, H. T.: Considerations in the excising of aortic aneurysms. *Ann. Surg.* 138:377, 1953.
3. Baker, A. G., Jr.; Roberts, B.; Berkowitz, H. D. and Barker, C. F.: Risk of excision of abdominal aortic aneurysm. *Surg.* 68:1129, 1970.
4. Barratt-Boyes, B. G.: Symptomatology and prognosis of abdominal aortic aneurysm. *Lancet* 2:716, 1957.
5. Blaisdell, F. W.; Lim, R. C., Jr.; Amberg, J. R.; Choy, S. H.; Hall, A. D. and Thomas, A. N.: Pulmonary microembolism. *Arch. Surg.* 93:776, 1966.
6. Butcher, H. R.: In discussion. *Arch. Surg.* 100:460, 1970.
7. Christiansen, J. and Mouridsen, H. T.: Ruptured aneurysm of the abdominal aorta. *Acta Chir. Scand.* 133:111, 1967.
8. Coles, J. C.; Butteriglierio, J. and Fisher, G.: The emergency abdominal aneurysm. *Arch. Surg.* 93:6, 1966.
9. Creech, O., Jr.: Endo aneurysmectomy and treatment of aortic aneurysm. *Ann. Surg.* 164:935, 1966.
10. Darling, R. C.: Ruptured arteriosclerotic aortic aneurysm. *Am. J. Surg.* 119:397, 1970.
11. DeBakey, M. E. and Cooley, D. A.: Surgical treatment of aneurysm of abdominal aorta by resection and restoration of continuity with homograph. *Surg. Gynec. Obstet.* 97:257, 1953.
12. DeBakey, M. E.; Crawford, E. S.; Cooley, D. A.; Morris, G. C., Jr.; Royster, T. S. and Abbott, W. P.: Aneurysm of the abdominal aorta. *Ann. Surg.* 160:622, 1964.
13. Dubost, C.; Allary, M. and Oeconomos, N.: Resection of an aneurysm of the abdominal aorta. *Arch. Surg.* 64:405, 1952.
14. Gaspar, M. R.: In discussion. *Am. J. Surg.* 106:141, 1963.
15. Graham, A. L.; Najafi, H.; Dye, W. S.; Javid, H.; Hunter, J. A. and Julian, O. C.: Ruptured aortic aneurysm. *Arch. Surg.* 97:1024, 1968.
16. Gwinn, C. B. and Oury, J. H.: A review of abdominal aneurysm at the Naval Hospital, San Diego, Calif. *Amer. Surg.* 34:142, 1968.
17. Hall, A. D.; Zubrin, J. R.; Moore, W. S. and Thomas, A. N.: Surgical treatment of aortic aneurysm in the aged. *Arch. Surg.* 100:455, 1970.
18. Hardin, C. A.: Survival and complications after 121 surgically treated abdominal aneurysms. *Surg. Gynec. Obstet.* 118:541, 1964.
19. Javid, H.; Dye, W. S.; Grove, W. J. and Julian, O. C.: Resection of ruptured aneurysm of the abdominal aorta. *Ann. Surg.* 142:613, 1955.
20. Kirklin, J. W.; Waugh, J. M.; Grindlay, J. H.; Openshaw, C. R. and Allen, E. V.: Surgical treatment of arteriosclerotic aneurysms of the abdominal aorta. *Arch. Surg.* 67:632, 1953.
21. Kouchoukos, N. T.; Levy, J. F. and Butcher, H. R., Jr.: Mortality from ruptured abdominal aortic aneurysm. *Amer. J. Surg.* 113:232, 1967.
22. Lawrence, M. S.; Crosby, V. G. and Ehrenhaft, J. L.: Ruptured abdominal aortic aneurysm. *Ann. Thorac. Surg.* 2:159, 1966.
23. Mannick, J. A.; Brooks, J. W.; Bosher, L. H. and Hume, D. M.: Ruptured aneurysms of the abdominal aorta. *New Eng. J. Med.* 271:915, 1964.
24. Martin, P.: Ruptured abdominal aortic aneurysm. *Proc. Royal Coll. Surg. Eng.* 58:867, 1965.
25. Nobis, P. D.: Aortic occluder—a new instrument. *Surg.* 68:805, 1970.
26. Sanger, P. W.; Robicsek, F.; Taylor, F. T. and Thomas, M. J.: Ruptured aneurysm of the abdominal aorta. *North Carolina Med. J.* 25:501, 1964.
27. Stoney, R. J. and Wylie, E. J.: Surgical treatment of ruptured abdominal aneurysms. Factors influencing outcome. *California Med.* 111:1, 1969.
28. Szilagyi, D. E.; Smith, R. F.; De Russo, F. J.; Elliot, J. P. and Sherrin, F. W.: Contribution of abdominal aortic aneurysmectomy to prolongation of life: 12 year review of 480 cases. *Ann. Surg.* 164:678, 1966.
29. Van Heeckeren, D. W.: Ruptured abdominal aortic aneurysms. *Amer. J. Surg.* 119:402, 1970.

# Symptomatic Diverticula

## *Complications of Duodenal Diverticula: A Case Report of Obstruction*

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DIVERTICULA OF the duodenum after a brief flurry of surgical activity earlier this century have fallen into an uneasy diagnostic oblivion. It appears that the majority of internists and abdominal surgeons degrade the x-ray diagnosis of duodenal diverticula as incidental. Most patients, however, who get upper gastrointestinal x-rays series (UGI) have abdominal symptoms and the findings of a duodenal diverticulum are therefore not incidental and must be put into place in the differential diagnosis of the intestinal complaint.

### Incidence

That duodenal diverticula are not rare is shown by their presence in 1.2 per cent of 6,847 UGI by Case,<sup>1</sup> 5.19 per cent of 770 by Cryderman<sup>2</sup> and 5.76 per cent of 1,560 by Chitambar.<sup>3</sup> Other x-ray series average 2.3 per cent.<sup>3</sup> Ackerman<sup>4</sup> made a study of the problem by making a plaster cast of the duodenum of fifty cadavers chosen at random and showed diverticula in 22 per cent. This suggests that the x-ray is efficient in diagnosis in less than 20 per cent of the duodenal diverticula.

Jones<sup>5</sup> pointed out that 69.3 per cent of duodenal diverticula had associated organic disease: esophageal hiatus hernia, 16.3 per cent; gallbladder disease, 20.4 per cent; peptic ulcer disease, 20.4 per cent; and diverticuloses of the colon, 30 per cent. It might be that Saint's triad should be changed to pentad. When any of the five are found, the others should be sought for, each given its proper weight and all considered before definitive surgical treatment is undertaken.

### Location

Duodenal diverticula may be single or multiple. The solitary type is the most common. The majority are on the concave surface of the duodenum frequently close to the common bile duct. In this location they are referred to as perivaterian. The location varies from series to series but is approximately 5.5 per cent in the first portion, 60 per cent in the second and 34.5 per cent in the third.

### Symptoms

Most duodenal diverticula without complications are asymptomatic. There is probably only one pair of symptoms that may be due to the diverticulum alone and that is nausea after meals and an other-

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**This paper has briefly reviewed the literature on duodenal diverticula. A case of duodenal diverticula with obstruction is presented. The patient was treated with a side-tracking procedure and has done well.**

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wise unexplained weight loss. The symptoms we find are related for the most part to the complications, and when we find these the diverticulum is no longer incidental or innocuous but is fraught with danger, death, disability, difficulty of decision and becomes one of the most perplexing, difficult and treacherous of all surgical procedures.

### COMPLICATIONS

(As modified from Waugh<sup>6</sup>)

- A. Inflammation:
  - 1. Diverticulitis and peridiverticulitis
  - 2. Perforation
    - a. Abscess formation
    - b. Fistula formation
- B. Obstruction:
  - 1. Common bile duct
  - 2. Pancreatic duct
  - 3. Duodenum
- C. Hemorrhage:
  - 1. Primary from inflammation
  - 2. From ectopic gastric tissue
- D. Tumors arising in a diverticulum

### TREATMENT

Asymptomatic uncomplicated duodenal diverticula do not need any treatment. The simple nausea is sometimes modified by changing position after eating which makes one suspect that the diverticulum has emptied itself by gravity. Diet, antispasmodics and pH modifiers do not influence the nausea.



## PERFORATION

The perforation of a duodenal diverticulum is an acute surgical emergency. Of the 23 cases reported in Zieger's excellent article<sup>7</sup> in 1962, ten were treated by diverticulectomy, two with drainage, one with simple closure of an ulcer, one with cholecystectomy, one with gastroenterostomy, the perforation was not found in one, and four were not operated. The mortality rate was 48 per cent. Numerous other articles in the literature report the same dismal results.<sup>8-11</sup>

## OBSTRUCTION

Obstruction of the common or pancreatic ducts or the duodenum itself is much less common. Such obstruction should be relieved by a complete side-tracking procedure. A gastric resection is preferable to a gastrojejunostomy. This is particularly true if the diverticula are multiple. Of course this decision must be made in light of the whole picture, hiatus hernia and gallbladder disease, peptic ulcer and colonic diverticula. Side-tracking procedures have been mentioned in the literature.<sup>12-15</sup>

## HEMORRHAGE

Mahorner did a gastric resection for hemorrhage from a diverticulum in the first portion of the duodenum,<sup>16</sup> and whenever this diagnosis is made this should continue to be the operation of choice.

## TUMORS

Since this is no place for a frozen section, tumors in diverticula should be treated as all other tumors of the duodenum.

## Report of a Case With Obstruction

The patient was a 57-year-old man who for five years had intermittent attacks of epigastric pain, nausea and vomiting. In December 1970 the symptoms became worse and in a few hours he developed severe epigastric distress and copious vomiting. A cholecystogram was negative. A UGI revealed five large duodenal diverticula. Repeated gastric analyses showed achlorhydria. A barium enema and intravenous pyelogram were negative. He improved with nasogastric suction and IV fluids. He was well during Christmas. In January 1971 a severe recurrence

yielded to the same treatment. A diagnosis of duodenal obstruction was made. A decision was made that removal of all the diverticula would destroy the duodenum and that a complete short-circuiting procedure would be better. If recurring symptoms required a duodenectomy, a gastric resection would serve as an excellent stage one.

In January 1971 an operation was performed. Exploration revealed a distorted duodenum. All of the diverticula seen on x-ray could not be identified without insufflation and for our purpose this was not indicated. One large diverticulum of the second portion of the duodenum was particularly troublesome. The duodenum was rolled medially a little to facilitate the surgery. About 40 per cent of the stomach, including the pylorus, was removed. Anastomosis was completed with an anterior Polya gastrojejunostomy.

The postoperative course was uneventful. The patient was eating without nausea or pain ten months later. There has been no weight loss.

## References

1. Case, J. T.: Diverticula of small intestine, other than Meckel's diverticulum. *JAMA* 75:1463, 1920.
2. Cryderman, W. J.: In Edwards, H. C.: *Diverticula and Diverticulitis of the Intestine*. Baltimore, Williams and Wilkins Company, 1939.
3. Chitambar, A.: Duodenal diverticula. *Surgery* 33:768, 1953.
4. Ackerman, W.: Diverticula and variations of the duodenum. *Ann. Surg.* 117:403, 1943.
5. Jones, W. J.: The perplexing duodenal diverticulum. *Surgery* 48:1068, 1960.
6. Waugh, J. M.: Primary diverticula of the duodenum. *Ann. Surg.* 141:193, 1955.
7. Zeifer, H. D.: Duodenal diverticulitis with perforation. *Arch. Surg.* 82:128, 1961.
8. Byerley, W. L., Jr.: Duodenal diverticulitis with perforation. *Surgery* 25:441, 1949.
9. Graves, H. A.: Perforated duodenal diverticulitis. *Am. J. Surg.* 112:908, 1966.
10. Landor, J. H.: Duodenal diverticula. *Arch. Surg.* 93:183, 1966.
11. Neill, S. A.: The complications of duodenal diverticula and their management. *Surg. Gynec. Obstet.* 120:1251, 1965.
12. Biegen, H. M.: Entrance of a common bile duct in a duodenal diverticulum. *JAMA* 148:196, 1952.
13. Burgess, C. M.: Complications of surgery on duodenal diverticula. *Surg. Clin. N. Amer.* 50:351, 1970.
14. Waugh, J. M.: Duodenal and jejunal diverticula. *Surgery* 41:674, 1957.
15. Patterson, R. H.: Surgical significance of duodenal diverticula. *Ann. Surg.* 134:835, 1951.
16. Mahorner, H.: Diverticula of the duodenum. *Ann. Surg.* 133:697, 1951.



# The Diagnostic Value of Mediastinoscopy

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## Introduction

IN ESTABLISHING a diagnosis of diseases of the lung and mediastinum, a wide array of diagnostic procedures is available to the physician. Such procedures vary considerably not only in terms of the reliability and usefulness of the information which they obtain but also in terms of discomfort, relative morbidity and mortality to the patient. The aim of this communication is to discuss the technique of mediastinoscopy, a method of exploring the superior mediastinum with minimal surgical trauma, and its significance as an adjunct in the diagnosis of intrathoracic disease. In addition, the results of 31 cases studied thus far at the University of Kansas Medical Center will be presented.

## Technique

Mediastinoscopy is usually carried out under general anesthesia with endotracheal intubation. Local anesthesia may be used in certain circumstances; however, this is generally not advocated. The patient is placed in the supine position with the back slightly elevated by the placing of several folded towels beneath the scapulae, and the neck is hyperextended with the head rotated to one side. The use of appropriate draping will allow the anesthetist to work at the side of the operating table while the surgeon and his assistant assume their positions at the head of the table. The neck and anterior chest are prepared, and the patient's entire head is draped.

A three to four centimeter low transverse cervical incision is made approximately two fingerbreadths above the manubrium in a position slightly lower than that used for tracheostomy. The wound is extended and spread in a vertical manner, so that the median raphe is split, and the strap muscles are retracted with resulting exposure of the anterior surface of the trachea inferior to the thyroid isthmus. The pretracheal fascia is then entered, and by blunt digital dissection with the index finger a tunnel is developed into the anterior mediastinum by staying close to the ventral wall of the trachea. This dissection is carried to and beyond the tracheal bifurcation

with exposure of the anterior and lateral walls of the trachea and both main-stem bronchi by the exploring index finger. The digital dissection will pass posterior to the innominate artery and arch of the aorta which can be easily palpated. During this dissection, the surgeon may palpate lymph nodes or masses present in the areas along each side of the trachea. Such palpation will offer valuable informa-

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**Mediastinoscopy is a safe, simple procedure which may be applied as a part of the diagnostic evaluation in all patients with intrathoracic disease. The procedure is associated with minimal morbidity, and the information derived will influence subsequent treatment in a high percentage of patients.**

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tion regarding the presence and consistency of masses or tumor present within the mediastinum and adjacent lung as potential biopsy sites.

After a suitable tunnel has been formed, the mediastinoscope is cautiously introduced beneath the pretracheal fascia and advanced into the mediastinum under direct visualization. The mediastinoscope is never introduced primarily or forced into the mediastinum. Through the mediastinoscope, structures which have been palpated during the blunt dissection are easily visualized and identified. The anterior and right and left lateral walls of the trachea may be viewed, and the right and left main-stem bronchi may be inspected for two or three centimeters along their length. The azygos vein is seen on the right, and the recurrent laryngeal nerve is present on the left. Further dissection may be carried out through the mediastinoscope utilizing the blunt dissection forceps or tracheal suction catheter in order to expose subcarinal nodes.

Lymph nodes may be easily recognized by the presence of anthracotic pigment. However, occasionally questionable nodes may resemble blood vessels, and for this reason it is wise to always aspirate a structure using a 20 gauge long spinal needle on a syringe before biopsy is attempted. In this manner biopsy of vital structures such as the right atrium,

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right pulmonary artery or posterior aspect of the aortic arch may be avoided. After a node or tumor tissue is adequately defined, punch biopsy or complete enucleation of such a structure may be accomplished. Under ordinary circumstances little bleeding is encountered, and that amount which is observed may be controlled via pressure or the use of hemostatic gauze (Gelfoam). Silver clips may be placed at biopsy sites as an aid to subsequent radiologic identification.

Following biopsy the mediastinoscope is removed, the strap muscles are approximated and the platysma and skin closed primarily using fine sutures. Ordinarily, drains are not left in the neck. However, should the need arise, drainage should be of a suction type as the pressure in the mediastinum is sub-atmospheric. A small dressing is placed on the neck and the patient allowed to waken. The patient may have a clear liquid diet the evening of operation and resume preoperative status in terms of diet and ambulation the day following surgery. Generally, the only discomfort is that of a mild sore throat for approximately 24 hours following the surgery. The patient may be discharged in one or two days, if no further studies are required, and the stitches removed in three to four days.

Mediastinoscopy has been combined with a number of other procedures. Bronchoscopy or esophagoscopy may be carried out utilizing the same endotracheal anesthesia. In addition, some have followed mediastinoscopy, if conditions permit, with open thoracotomy and lung resection following the receipt of the frozen section diagnosis, especially when exploration of the mediastinum is negative.

It must be stressed that mediastinoscopy should not be carried out by the surgical neophyte or those who are not fully aware of the anatomic region being explored. The surgeon performing the procedure should be one who is qualified to perform a thoracotomy should the need arise due to untoward complications. In like manner, all precautions must be exercised.

### Indications

Mediastinoscopy is indicated in establishing the diagnosis of intrathoracic disease particularly where mediastinal involvement of lymph nodes is apparent. Tissue diagnosis of intrathoracic lesions is not only highly important in determining the type of therapeutic maneuver to be carried out but also in the ultimate prognosis of the disease process.

The list of such intrathoracic lesions is long. However, mediastinoscopy should play a significant role in the diagnosis of carcinoma of the lung, sarcoidosis, tuberculosis and other granulomatous diseases, pneumoconioses, lymphoma, Hodgkin's disease, car-

cinoma of the esophagus, and other miscellaneous mediastinal tumors and cysts. Mediastinoscopy should only be carried out, however, when other even less formidable means of diagnosis have been of no avail. Useful procedures include sputum cytology, bronchoscopy, bronchial washings, bacteriological and fungal cultures, Kveim test, scanning techniques, pulmonary angiography and scalene node biopsy. The latter is appropriately used only when palpable lymphadenopathy has been identified. When such methods have been exhausted and the determination of intrathoracic disease is necessary, then mediastinoscopy may be appropriately employed. Indications for mediastinoscopy include the following:

1. To establish a tissue diagnosis in unknown intrathoracic lesions when other methods have failed.
2. To establish feasibility of curative resection especially in cases of suspected bronchogenic carcinoma.
3. To establish the extent of metastatic disease.
4. To avoid exploratory thoracotomy in cases of carcinoma, which has extended beyond the boundaries of a standard pulmonary resection.
5. As a means of diagnosis in patients whose pulmonary or cardiovascular status preclude a more extensive procedure.

Attempts to establish feasibility of resection of carcinoma of the lung without resorting to formal thoracotomy have resulted in a variety of procedures which have met with a varying degree of success and enthusiasm. Scalene node biopsy as employed by Daniels and introduced into this country in 1949 has been received with a high degree of enthusiasm in spite of all too often disappointing results, especially when used as a "blind" method of biopsy as it was originally described. Leckie and McCormack report on a study of 107 patients admitted to the City Hospital of Edinburgh with bronchial carcinoma.<sup>14</sup> In 81 of the 107 patients no scalene adenopathy was appreciated, and in these 81 patients tumor invasion of the scalene nodes was confirmed histologically in only one patient. Palpable scalene adenopathy was reported in 26 of the 107 patients, and in this group six patients were observed to have evidence of tumor metastasis. Modifications of the Daniel's procedure have been developed by many investigators including, notably, Harken *et al.*,<sup>12</sup> who described a cervicomedial exploration and obtained markedly better results, Radner<sup>20</sup> (suprasternal node biopsy), Lui<sup>15</sup> (deep cervical and paratracheal lymph node biopsies), and finally culminating with Eric Carlens of Sweden who introduced the technique of mediastinoscopy as it is performed today.<sup>7</sup>

Mediastinoscopy is gradually replacing scalene

node biopsy as a means of determining resectability of carcinoma of the lung. Certainly, it would appear that the incidence of positive tissue diagnoses would rise as one proceeds closer to the primary lesion, and such has been proved to be the case.<sup>14, 19</sup> If positive nodes are discovered high in the mediastinum proximal to the intended line of resection or on the contralateral aspect of the mediastinum relative to the lesion, then such lesions are, by definition, out of the operative field. Mediastinoscopy is the only procedure whereby both right and left aspects of the superior mediastinum may be simultaneously inspected and biopsied. Nohl has shown that in cases of bronchogenic carcinoma with mediastinal lymph node involvement (Stage 3 according to Salzer's classification of carcinoma of the bronchus) the chances of survival are profoundly altered, there being only 9.7 per cent of such patients alive at the end of a four-year period.<sup>16</sup> Even radical pneumonectomy, as has been advocated, does not significantly increase the number of long-term survivors.<sup>5-10</sup> Close attention must be paid to the individual case, however, including knowledge of the histologic type of tumor involved, and rigid criteria for the determination of resectability should not be adhered to. The natural history of carcinoma in general is well documented, but the individual case of bronchogenic carcinoma is subject to wide variations owing to the inherent biological interplay between tumor and host. Adherence to strict criteria will, of necessity, eliminate some individuals from surgical resection who might otherwise have benefited in terms of long-term survival. One must always keep in mind that the end result is (1) to restore the balance in favor of the host, and (2) that a vital organ should not be sacrificed unless the possible benefits far outweigh the immediate disability and chances of mortality. Therefore, mediastinoscopy assumes its place as a means which may allow the surgeon to determine his ability to remove the tumor completely and thereby ensure a reasonable likelihood of resection for cure.

## Results

To date, 31 patients at the University of Kansas Medical Center have undergone mediastinoscopy. Of the total group, 15 patients or approximately 48 per cent represented cases of primary carcinoma of the lung. Mediastinoscopy was positive for diagnosis in six of the 15 patients, or 40 per cent. In one other patient the diagnosis was essentially confirmed at operation. However, no biopsy was taken since the tumor mass was wrapped around the trachea and appeared to be contiguous with the innominate artery. In two other individuals with negative findings at mediastinoscopy who subsequently presented for

thoracotomy and in whom pneumonectomy was performed, metastatic disease was confirmed in only one of 12 hilar nodes in one patient and in only one hilar node in the remaining patient.

The reason for negative mediastinoscopy in the remainder of the patients may be due to one of several reasons such as:

1. No involvement of the mediastinal nodes with the disease process.
2. Relative inexperience of the operator or reluctance to pursue blunt dissection.
3. Limitations of the method.

There are several areas of lymphatic drainage of the lung which are anatomically relatively inaccessible for direct biopsy by mediastinoscopy.<sup>16-18</sup> Such regions are the posterior subcarinal nodes lying anterior to the esophagus, paraphrenic nodes lying alongside the phrenic nerves in front of the aortic arch in the anterior mediastinum, and the group of subaortic lymph nodes lying along the superior border of the left main bronchus and inferior to the aortic arch. Such regions are occasionally involved by the lymphatic spread of tumors of the lung but are out of reach of the operator.

It is interesting to note that of the six patients positive at mediastinoscopy for primary carcinoma of the lung, five, or 84 per cent, had right-sided lesions whereas only one of five left-sided tumors were positive. These findings confirm those of other investigators and correlate well with the higher incidence of mediastinal lymph node involvement in patients with right-sided tumors or centrally located anaplastic carcinomas. The incidence of positive mediastinoscopy in other series has ranged from 23 to 46 per cent and variations can probably be explained on the basis of case selection. Pearson *et al.*, have felt that on the basis of such studies a positive biopsy can be obtained in approximately one of every three patients with presumably operable carcinoma of the lung.<sup>19</sup> Resection was attempted in only five of our patients with suspected bronchogenic carcinoma and negative mediastinoscopy; two patients had subsequent pneumonectomy and of these only one is alive less than one year later. Two other patients were found to have a lymphoma and lymphosarcoma and are currently receiving therapy with chemotherapeutic agents. A fifth patient presenting with massive left hilar tumor was found to have a primary leiomyosarcoma of the pulmonary artery at thoracotomy and a palliative resection was carried out. One patient with a negative mediastinal biopsy who was advised to have a thoracotomy for possible curative resection refused such a procedure and is currently undergoing a course of radiation therapy. The remainder of the patients in the series are either receiving palliative radiation therapy with Co<sup>60</sup> or



received no palliative treatment due to the presence of widespread systemic metastases. Eleven other patients were examined and suspected clinically of having sarcoidosis. In all 11 mediastinoscopy was positive (100%) with the finding of multiple non-caseating granulomas present in the biopsy specimen. This is compatible with reported series of other investigators where positive mediastinal biopsies for sarcoidosis have ranged from 91 to 100 per cent.<sup>2</sup> The remainder of patients represented a variety of disease processes. Two patients with metastatic carcinoma to the lung had positive mediastinoscopies (one individual with a chronic lymphocytic leukemia infiltrate and another with metastatic adenocarcinoma of the colon diagnosed nine years previously). One patient had probable allergic bronchopulmonary aspergillosis with a negative mediastinoscopy who underwent thoracotomy for removal of the involved portion of the lung. The remaining patient had probable metastatic carcinoma, primary location unknown, with a negative mediastinoscopy. Permission for autopsy was refused.

Other procedures performed as a part of the initial diagnostic evaluation prior to the undertaking of mediastinoscopy were done at random as indicated in all patients. Such procedures included sputum cytology, bronchial washings for cytology, bronchoscopy, thoracentesis and scalene node biopsy. Sputum, bronchial washings and pleural fluid for cytological examination were never considered diagnostic as an isolated procedure but rather as confirmatory evidence in the establishment of the diagnosis. Two patients out of 11 had class V sputums, five of 16 patients had class IV or V bronchial washings (one patient was positive for AFB by bronchial washing) and one patient had thoracentesis times three with class V cytological findings on all three occasions. Bronchoscopy or bronchoscopic biopsy alone failed to produce a diagnosis in all 17 patients who underwent this procedure. Likewise, scalene node biopsy was negative in all six patients upon whom this procedure was attempted. Three patients had palpable scalene nodes.

## Complications

Mediastinoscopy was extremely well tolerated by all of our patients. There was no mortality related to the procedure and significant morbidity was slight. One patient developed shortness of breath and tachycardia following the procedure which subsided within 24 hours postoperatively, and another patient developed roentgenographic evidence of pneumomediastinum without clinically evident subcutaneous emphysema. This subsequently resolved with therapy. There were no cases of mediastinitis,

wound infection, tracheal or esophageal injury, recurrent nerve paralysis, mediastinal hemorrhage, pneumothorax or implantation of tumor within the wound itself. All of these complications have been reported in the literature. This re-emphasizes the need for the surgeon performing the procedure to be one who is thoroughly familiar with the anatomy of the region and who must be prepared to perform an emergency thoracotomy should complications develop (i.e., hemorrhage) which cannot be controlled by other means.

Contraindications to mediastinoscopy include only those patients in whom the procedure is technically unfeasible, i.e., inability to extend the neck. Superior vena caval syndrome has been considered by some to be an absolute contraindication to mediastinoscopy due to the possibility of increased bleeding. However, many investigators have encountered no hazards in such cases.

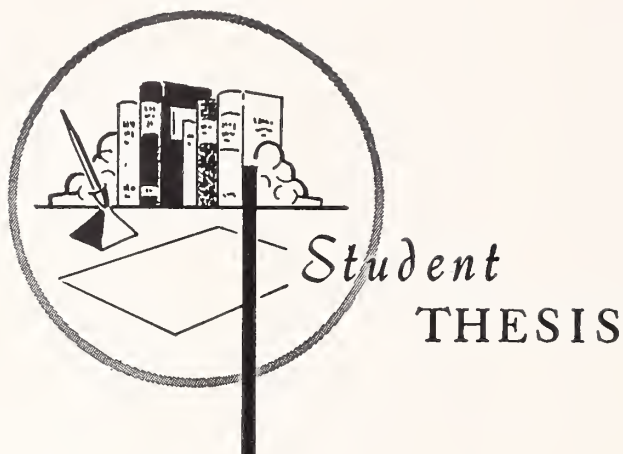
## Conclusion

A brief discussion of the background, technique, indications for and complications of mediastinoscopy have been presented together with a report of 31 cases. Six of 15 patients with primary carcinoma of the lung, or 40 per cent, had positive biopsies at mediastinoscopy. In 11 patients presenting with clinically suspected sarcoidosis, mediastinoscopy confirmed the diagnosis in 100 per cent. Thoracotomy as a diagnostic procedure was avoided in 77 per cent of the patients in the series.

## References

1. Adams, R.: Carcinoma of the lung: factors affecting survival after resection of cancer of the lung. *J. Thorac. Cardiovas. Surg.* 17:306-322, 1948.
2. Ashbaugh, D. G.: Mediastinoscopy. *Arch. Surg.* 100:568-573, 1970.
3. Bergh, N. P., Rydberg, B. and Schersten, T.: Mediastinal exploration by the technique of Carlens. *Dis. Chest* 46:399-410, 1964.
4. Bilgutay, A. M.: Mediastinoscopy. *J. Thorac. Cardiovas. Surg.* 57:841-848, 1969.
5. Boyd, D. P.: Is extended radical resection superior to lobectomy in treating resectable bronchial cancer? *JAMA* 195:1033, 1966.
6. Carlens, E. and Hambræns, G. M.: Mediastinoscopy. *Scand. J. Resp. Dis.* 48:1-11, 1967.
7. Carlens, E.: Mediastinoscopy: a method for inspection and tissue biopsy in the superior mediastinum. *Dis. Chest* 36:343-352, 1959.
8. Daniels, A. C.: Method of biopsy useful in diagnosing certain intrathoracic diseases. *Dis. Chest* 16:360-366, 1949.
9. Delarue, N. C.: Complementary value of pulmonary angiography and mediastinoscopy in individualizing treatment for patients with lung cancer. *Cancer* 26:1370-1379, 1970.
10. Feinstein, A. R.: A new staging system for cancer and re-appraisal of "early" treatment and "cure" by radical surgery. *New Eng. J. Med.* 279:747-753, 1968.
11. Hardesty, W. H.: Mediastinoscopy in a community hospital. *JAMA* 201:95-99, 1967.

(Continued on page 518)



## *Psychiatric Abnormalities in the Surgical Patient*

EDWARD P. GOULD, M.D.,\* *Phoenix, Arizona*

MANY PHYSICIANS have observed that the surgical patient is often prone to develop changes in behavior. In 1834, Dupuytren recorded seven cases of "nervous delirium," and stated that "... the brain itself may be overcome with pain, terror, or even joy, and reason leaves the patient when it is most necessary to his welfare that he should remain calm and undisturbed." Although there is no agreement as to the actual incidence of significant psychiatric abnormality in the pre- and postoperative period, it is certainly a factor which is worthy of consideration.

Psychiatrists have analyzed the dynamic factors of regressive behavior in surgical patients in terms of narcosis anxiety and castration anxiety; the practicing surgeon may have neither the inclination nor the opportunity to apply sophisticated psychiatric evaluation to all of his patients. However, surgeons should certainly be aware of the situations which may lead to emotional disturbance, the symptoms of a developing crisis, and essential factors in reducing emotional distress in their patients.

The postoperative patient may present a wide variety of clinical abnormalities which are indicative of central nervous system complications. There may be specific neurological signs, an altered state of consciousness, impairment of intellectual function, or alteration of mood. Some of these abnormalities will be quite obvious, others are much more subtle. However, any significant changes should be appar-

ent without lengthy evaluation, if the physician is sensitive to them.

There are many possible causes for central nervous system abnormalities in the surgical patient. Shock, hypotension during surgery, and arteriovenous shunting in the lungs may all result in cerebral hypoxia. There is the hazard of arterial air embolism, fat embolism, thromboembolism, and calcium and fibrin embolism from calcified heart valves. Fluid and electrolyte imbalance may also cause central nervous system abnormalities. Control of embolism and metabolic disorders is standard procedure in the care of the acutely ill postoperative patient.

In addition to these physiologic causes of central nervous system abnormality, the emotional stress of surgery may induce severe distress. Da Costa, in 1910, stated that the postoperative period might be marked by "... delirium, hysterical excitement, obsession, especially morbid fears, illusions, hallucinations, amnesia, confusion, impulsions, melancholy, and actual insanity."

Severe preoperative anxiety predisposes the patient to postoperative emotional disturbance. The problem is often compounded by the excessive use of narcotics which alter the sensorium, as well as by fear, pain, forced inactivity, and unfamiliar surroundings. The intensive care unit can provide the most severe emotional stress.

The treatment of patients in an intensive care unit is analogous to "brain washing" techniques of interrogation. The room is never darkened and it is impossible to retain orientation in time. Patients are frequently kept naked in full view of other patients

\* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. Gould recently completed his internship at Maricopa County General Hospital, Phoenix, Arizona.



and all hospital personnel. The patient is frequently in pain and is unable to move freely because of catheter tubes, intravenous tubes, and respirator tubing. The equipment which surrounds the patient is often poorly understood and frightening. As the patient becomes aware of his surroundings, he realizes that the other patients in the area are all critically ill, and he may even view the death of another patient. An otherwise healthy individual would be subjected to a great deal of stress if he were forced to stay in an intensive care unit. For the critically ill postoperative patient the stress may be intolerable.

In addition to the problems encountered in the intensive care unit certain types of surgery are associated with a high degree of postoperative emotional distress. Orthopedic procedures which necessitate long periods of traction or cast immobility may induce marked agitation and anxiety. The sensory deprivation which follows eye surgery is often accompanied by emotional distress. Patients may suffer the perception of exaggerated defects in their self-image following cosmetic surgery, genital urinary surgery, amputation, or colostomy.

It is obvious that the surgeon will not withhold necessary surgery or postoperative intensive care in order to avoid emotional stress on the patient. However, the physician should be aware of the nature of these emotional disturbances, and thereby be able to minimize them. The act of surgery may have a very destructive effect on the doctor-patient relationship. Patients often express a mixture of dependency and resentment for being placed in such a helpless situation. This may result in generalized frustration and anger against the physician and the entire hospital.

There are many available methods for evaluating the surgery patient. Clinical evaluations and routine laboratory studies should control metabolic factors such as ventilation, fluid, and electrolyte balance. Significant psychiatric factors should also be evaluated carefully prior to surgery and at frequent intervals during the postoperative period.

Emotional disturbances in the surgical patient have long been recognized, but there have been few attempts to determine the significance and the incidence of these complications. However, in a randomly selected series of 200 patients, Tichener reported that 86 per cent of the patients showed "either distressing psychologic symptoms or disabling patterns of behavior or both to the extent that a psychiatric illness could be diagnosed." A diagnosis of psychosis was applied to 22 per cent of the patients in the series; 1 per cent were found to have psychotic depressive reactions. Character and behavior disorders were seen in 44 per cent of the patients. It should be pointed out that this study was con-

ducted with a patient population which is predominantly from low income groups with a large geriatric population.

Frequent follow-up evaluations were obtained during the hospitalization and then three and six months after discharge. The long-term evaluations showed some startling results. "The fact that so many delirious patients—32 per cent in our series—continued in chronic brain syndrome or never quite regained their former mental sharpness allows no room for nonchalance regarding the prevention and treatment of these conditions." Of the patients who developed psychosis in the hospital, 4.8 per cent showed schizophrenic reactions, and 35.5 per cent developed acute brain syndrome with psychosis.

Tichener's study pointed out several factors which seemed to predispose to postoperative emotional disturbance. These complications occurred most often in elderly patients and in patients who had minimal family emotional support. The incidence of severe emotional disturbance among all types of cancer patients was very high.

Because of the wide variety of emotional disorders which were seen in Tichener's series, the term *postoperative psychosis* is a misnomer. The stress of surgery was sufficient to cause an exacerbation of pre-existing psychopathology. However, the significance of this statement may be merely academic. The fact that 86 per cent of the patients studied showed significant emotional disturbance seems to be the most relevant observation.

Emotional disturbance in the surgical patient can present severe clinical problems to the surgeon. Postoperative morbidity may be increased by the patient's inability to cooperate in clearing bronchial secretions, and the patients may even become combative and tear off dressings and intravenous tubing. Even if there are no serious impediments to routine nursing care, there is no justification for causing the patient needless distress. In some cases, marked preoperative anxiety may be sufficient justification to defer elective surgery. Ordinarily, careful counseling by the surgeon will be sufficient to allay these anxieties, but psychiatric consultation may be required in some instances. Patients with a history of previous psychiatric disturbance should be carefully evaluated prior to major elective surgery.

The expenditure of a small amount of time in the preoperative period may minimize many time consuming complications during the hospital course. The nature and magnitude of the surgery should be carefully explained and major details of the postoperative course should be discussed. The justification for this counseling extends far beyond the medical-legal importance of informed consent. It may seem tempting to withhold frightening details from the patient before surgery, but a well informed patient

will not be inclined to view normal postoperative discomfort as an ominous complication.

If it will be necessary to place the patient in an intensive care unit after surgery, it may be desirable to let him visit the unit, see the monitoring equipment, and meet the nurses. The area should then seem more like a hospital and less like Hell.

Frequent reassuring contacts with the physician can be very important during the immediate postoperative period. The physician should be alert for alterations in the patient's behavior and sensorium and should instruct the nurses to report unusual behavior. The use of narcotics which alter the sensorium should be kept to a minimum, and in some cases minor tranquilizers may be of benefit.

The patient's family should be encouraged to make frequent short visits if the medical condition warrants it. The presence of familiar stimulus is important in maintaining the patient's orientation. With such simple devices as a bedside calendar and clock the patient may be helped to regain orientation in time. If the patient can be placed near a window, he will be better able to orient himself in time and place.

In all cases, the physician should make frequent personal contact with the patient and, if possible, give some indication of his general condition and

progress. He will be far more likely to retain a confident cooperative attitude toward the hospital and the physician and the hospital if he understands the nature and purpose of the treatment.

The majority of postoperative emotional disturbances are of short duration and have no serious sequelae. However, a significant number of patients suffer long-term psychiatric complications. In any event, these patients are often subjected to emotional distress which could be easily alleviated.

## References

1. Abram, H. S.: Psychological aspects of the intensive care unit. *Hosp. Med.*, December, 1969.
2. Abram, H. S. and B. F. Gill: Predictions of postoperative psychiatric complications. *New Eng. J. Med.* 265: 1123, 1961.
3. DaCosta, J. C.: The surgical patient. *Surg. Gynec. Obstet.* 11:577, 1910.
4. Dupuytren, Baron: Clinical records of surgery. *Lancet* 2:919, 1834.
5. Friedman, A. M. and Kaplan, H. I.: *Comprehensive Textbook of Psychiatry*. Baltimore, Maryland, Williams and Wilkins Co., 1967.
6. Gilman, S.: Cerebral disorders after open heart surgery. *New Eng. J. Med.* 272:489, 1965.
7. Tichener, J. L., et al.: Psychosis in surgical patients. *Surg. Gynec. Obstet.* 102:59, 1956.
8. Tufo, H. M., Muslin, H. and Ostfeld, A. M.: Central nervous system complications in the surgical patient. *DM*, November, 1968.

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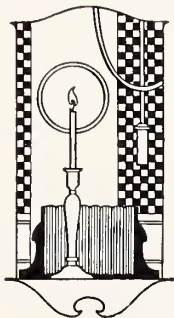
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## *The President's Message*



On the first Christmas day, Luke records that a voice from Heaven said, “. . . on Earth peace and good will toward men.”

The officers and staff wish for you the promises of that first Christmas. Would it not be nice in 1972 if this could come true.



*Dr. J. Reale, M.D.*

*President*



## Editorial COMMENT

### *The Size of the Health Dollar— and Why Not?*

It is pleasant, at times, to be able to put in a good word for some effort of that ubiquitous adversary, the federal government. In this instance, we commend to your attention a chart book recently published by the Office of Research and Statistics of the Social Security Administration entitled, "The Size and Shape of the Medical Care Dollar." It traces the salient changes in medical economics over the past few years and, while necessarily superficial, it offers a good background for the layman to derive some understanding of some of the features of the economic problems of the health care scene.

It is moderate in what it says, and the brevity imposed on it by its form and purpose do not result in a downgrading of the medical profession, as is so often the case, by implication if not direct statement. Its governmental origin is indicated by the casual way with which it tosses around such terms as billions of dollars, but it comes across as an effort to give a dispassionate perspective to a serious problem.

It informs us that in 1970 the medical care dollar value was \$67.2 billions or 7 per cent of the gross national product. This was an increase since 1950 from \$12.1 billion which at that time represented 4.6 per cent of the gross national product. The increase has been much more rapid in recent years, and this is shown in a breakdown of the sources contributing to this cost. In 1966, private sources paid 74 per cent of the bill, the state and local agencies paid 13 per cent, and the federal government paid 13 per cent. Came Medicare and Medicaid and the federal government's share has doubled in percentage to 25 per cent, the state and local contribution has been almost unchanged at 12 per cent with the private portion dropping to 63 per cent. However, since the dollar cost increased from \$42.3 billions to \$67.2 billions, this drop of 11 per cent was actually an increase of \$1.1

billions. The state and local figures went up by half, and the doubled percentage of the federal portion was actually a three-fold increase in dollars spent.

Personal health care in 1950 cost \$10.5 billions and in 1970, \$58.0 billions. Population increase accounted for 17 per cent of this, increase in prices 47 per cent, and increased utilization, new techniques, and new therapies the remaining 36 per cent. Instead of reading into these figures the machinations of greedy if not larcenous physicians, the report states: "The rapid increases in medical care prices since 1966 were attributed to such factors as the rise in salaries of hospital personnel, rearrangements in the pricing structure of hospitals, and the increased demand for physicians' services as a result of the Medicare and Medicaid programs without a corresponding increase in supply."

It recognizes the factors contributing to the increase in the physician's share of the health dollar by stressing the increase in population, especially the aged with their greater demand for care, the increase in personal income of patients, the increase of public and private insurance, and the heavier case load per physician. The individual outlay for medical care in 1950 was \$69 with the patient paying \$46 himself. In 1970, the average bill came to \$280 with the patient paying \$110 of this, largely items and services not covered by health insurance. Meantime, in 1966, the government spent \$7.9 billions for health services; in 1970, it was \$20.5 billions. (See what we mean about the billions—you get to thinking of them as some sort of marbles or tiddly-winks.) Of the latter (billions, not tiddly-winks), \$10.1 billions went for Medicare and Medicaid, the remainder for VA, Defense, and other programs. If you are not already convinced of the trend of the times, the government now pays, one way or another, almost



half of the total hospital bill for the nation. In 1966, private sources paid 64 per cent, the state and local governments 23 per cent, and the federal government 13 per cent. In 1970, these had become 52 per cent, 17 per cent, and 31 per cent.

Well, we can play around with figures indefinitely and make arguments pro and con. The brochure is worth some study but we don't want to be led away from noting what we think is one of the basic misconceptions in the whole thing. With all of the contention involved in the changing medical scene, we seem to have overlooked an important question: Why, in the name of human betterment (which is what it's all supposed to be about), should not health care be one of our major expenses? Why should apologies be made if it costs 7 per cent of the gross national product—or more—to provide health care? This is not to condone duplication, unnecessary expenditures, inefficient management, or inadequate service. The need to get the most for our money—public or private—is an economic requisite in any effort that is going to remain viable. Too much of the time, past medical services have been pointed to as glaringly deficient but this was when measured against standards not existent at that time and goals not being sought. The changing standards and new goals are laudable, and the need for adjustments in the medical profession are justified to meet them. But these are the very reasons the bill can and should be larger.

We read that patients appreciate a frank statement of what the charges for services will be, and when the physician takes time to explain and discuss the financial aspect of the care, the relationship is better and the physician is more comfortable. All right, let's not be evasive or apologetic about the cost. There are obviously many factors beyond the physician's control that have contributed to the medical care problem, and every politician knows it, so let it be no source of vexation or embarrassment to the physician if he finds that the government's figures indicate that the patient is expending more for health care than he is for liquor, cosmetics, sports, and other indispensable items.—*D.E.G.*

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### THIS WAY UP

A little glory is an enjoyable thing even if it is obliquely reflected and diluted by time and distance. Thus it has been a source of some pleasure to us that the Nobel Prize designate in Medicine for 1971 is Earl Sutherland, M.D., late of Burlingame, Kansas and points east. We think Kansas and its medical profession in particular should sound the klaxon. Earl was a warm and modest, albeit brilliant, individual

when we shared a lab table and burned acid holes in our lab coats together at Washburn these many years ago. We can't honestly say we foresaw that one day he would reach such heights. In fact, we presumed that we, having assimilated "Arrowsmith," "Devils, Drugs, and Doctors," and "Microbe Hunters," would be the logical one to do so—a slight miscalculation. But these comments do not intend to pay homage to Earl who, unless he has changed mightily, has already had his fill of homage. We think, rather, that he would approve of our desire to pay some attention to some of the elements that led to his achievement.

First, there was Burlingame, population 1,000 plus. It would be interesting if some day some sociologist would investigate the number of Burlingames over the world which have started the Earl Sutherlands on the road. There is an inescapable feeling that small towns endow some of their offspring with unusual potentialities. Perhaps it is just the recurrent surprise that great minds are not the exclusive products of the metropolises. There must be something there and we hope it doesn't get lost in the seemingly inexorable urban encroachment.

Then there was Washburn which was somewhat more modest in size than now—and it is still modest compared to the academic behemoths of the day. It has no mean record of achievement in turning out some rather useful citizens, but again it would be interesting to know how much the Washburns of the world have contributed to mankind. Pound for pound, we suspect more than the Big Brothers of Academe. In those days, the law school dominated the scene—those suave cads with their canes and winning ways with women. Their attitude toward the pre-meds—if, indeed, they even knew of our presence—was one of scorn. Well, we showed them—didn't we, Earl?

And then there were the professors. There was a certain quality to a department consisting of one professor and maybe an assistant if the budget allowed. But then a class of six or eight was considered to be getting unwieldy in size. We presume professorial dedication is pretty much a personal thing but they had it. We wish Prof Reed had lasted one more year so that he might know of this event in which he could feel a very personal victory. But maybe he knows and is grinning—he's the only person we ever knew who grinned up and down instead of across. It would be interesting to know how much the world owes to the likes of him.

Well, it's a long road from Burlingame, Kansas to Stockholm, even with a pit stop at Washburn to have the windshield cleaned. We hope you enjoyed the trip. Earl—and it was nice to wave at you as you went by.—*D.E.G.*

# The Month in Washington

The long awaited public hearings on the various proposals for national health insurance before the House Ways and Means Committee are now underway. Some 200 organizations and individuals are expected to testify during the scheduled six weeks of hearings.

Lead off witness was HEW Secretary Elliot Richardson who revealed an entirely new proposal "to tighten controls on provider costs and inefficiencies."

The Secretary also outlined the long-awaited program for regulating private health insurance companies. In the 38-page statement, Richardson was highly critical of the Kennedy-Labor Bill.

Richardson said the provider controls and the insurance company plan will be submitted in legislative detail to the Committee shortly.

Following is a summary of the Administration's text on the provider plan:

—The states shall require health insurance companies to inform prospective policyholders as to benefits, exclusions, premium costs and delivery system choices.

—The states shall require providers to inform the public as to charges for standard items and other patient access matters.

—The Administration will establish on an experimental basis local quality review organizations composed of outside medical experts, including non-providers in some instances.

—The Administration will also propose to require NHISA carriers to apply control measures and statistical reporting measures in accordance with Federal guidelines, such as strict review of utilization of health care services. Specific plans for implementation with regard to wages and prices will be developed in conjunction with the Committee on the Health Industry established by the President under Phase II of his new economic policy.

—State planning agencies will be required in cooperation with area-wide planning agencies and as a condition of Federal grant support and approval, to identify geographic areas of physician and facility oversupply. States are to develop and apply detailed criteria based on Federal guidelines, and publish this information.

Under the proposed insurance company regulations, Richardson said the Administration will secure agreements with states under which the states will:

—Require annual, independent audits of participating insurance companies.

—Create state health insurance insolvency mech-

anisms. A Federal mechanism will also be established for use if a state fails to act satisfactorily.

—"File and use" procedures for premium rates under NHISA insurance contracts, with authority to disapprove extraordinary rates.

—Require disclosure by insurers of their administrative expenses as a percentage of premiums.

—Create state insurance pools, on a state-wide or sub-state basis open to small employers, the self-employed, and those who are not employed, but are ineligible for Federally-financed health programs.

Expected to be signed into law shortly is health manpower legislation that will authorize an estimated 2.9 billion dollars in aid to health profession students and their schools in the next three years—and provide the facilities and programs to close the manpower shortages in the health professions within seven years.

Medical schools would receive \$11,500 for the full-term cost of training each student. Each school would receive \$2,500 per student per year for the first three years of training. The grant rises to \$4,000 for the year of graduation. In order to encourage swifter training, three-year schools would receive \$13,500 based on \$2,500 for each of the first two years and \$8,500 for the third year.

Each school would be required to enroll an additional five per cent of students, or five students—whichever is the greater—to qualify for assistance. An extra \$1,000 a year would be awarded schools for each student exceeding this total. The legislation will also help establish at least five new medical colleges.

Additional authorizations would provide \$270 million for health manpower education initiative awards to alleviate manpower shortages and to train new types of personnel, and \$412 million for special project grants for programs in family medicine, physician assistant training, and others. The bill continues support for scholarship and student loans at increased levels as has been provided heretofore in the Health Professions Educational Assistance Act.

President Nixon formally established a committee on the health services industry to furnish advice on ways to keep health costs from climbing too rapidly. In an executive order, the chief executive said the committee—which is expected to consist of about 15 members—"shall provide advice concerning special considerations that tend to contribute to inflation in the health services industry."



# Council Meeting

## *Report of Meeting Held October 31, 1971*

The Council was called into session at 10:00 a.m. on Sunday, October 31, 1971 at the Downtown Topeka Ramada Inn. Dr. William J. Reals, President, called the Council to order.

Present were Dr. W. J. Reals, President; Drs. J. N. Blank, G. E. Burket, Jr., T. P. Butcher, F. T. Collins, K. L. Graham, C. M. Lessenden, Jr., J. C. Mitchell, L. R. Pyle, T. F. Taylor, E. D. Yoder; (Councilors) C. L. Francisco, Alternate, District Number 2; D. J. Smith, District Number 3; W. G. Rinehart, District Number 4; G. L. Mowry, District Number 5; R. R. Beach, District Number 6; S. S. Daehnke, District Number 8; S. C. McCrae, District Number 9; R. M. Glover, District Number 10; W. E. Meyer, District Number 11; V. W. Filley, District Number 12; E. T. Siler, District Number 13; M. O. Steffen, District Number 14; H. W. Hiesterman, District Number 16; R. W. Schmidt, Alternate, District Number 17; D. G. Laury, Alternate, District Number 18. Also present were Drs. A. W. Beahm, C. C. Conard, D. E. Gray, D. S. Klassen, M. R. Knapp, R. H. O'Donnell, N. H. Overholser, D. R. Pierce, L. W. Purinton, L. Speer. Also present were Mrs. Martha E. Hunt, Executive Secretary, Wyandotte County Medical Society; Mr. R. G. Swenson, Executive Assistant, and Mr. Oliver E. Ebel, Executive Director, Kansas Medical Society.

There was discussion of recent action by the House of Delegates on Resolution 71-3, AMA opinion polls. The Council instructed the AMA delegates from Kansas to introduce the following resolution at the New Orleans AMA meeting:

*Resolved*, That the AMA increase its efforts through the American Medical News or by any other means to more frequently obtain opinions from the members of the AMA on key national issues.

The Council was reminded that at the last meeting of the House of Delegates the method of selecting the Nominating Committee was amended. This year, the Nominating Committee will consist of two immediate past presidents (Drs. F. T. Collins and L. Speer) plus three physicians elected by the Council. Drs. C. C. Conard, S. C. McCrae and G. L. Mowry were elected by the Council.

The recent membership questionnaire was next discussed. The returns were considered insufficient for a decision at this time. Therefore, the Council adopted a motion whereby the Councilors will obtain the opinion of the doctors in their district and

report to the Society the majority opinion before December 1, 1971, and that the president of each county society should also be requested to obtain the opinion of the members of their society.

The financial statement was presented and discussed. The Council adopted a motion that all who have not paid their Building Fund dues be dropped from membership in the Society and that they be reinstated only if this was paid, and that a letter announcing their dismissal from the Society be written.

The Council also moved that a registered letter be sent to each physician who attempted to pay his Kansas Medical Society dues but was resisting payment of the 1971 AMA dues. Unless these AMA dues are received, membership in the Kansas Medical Society and in the component medical society to which they belong will be forfeited.

By unanimous vote of the Council, membership dues for 1972 were established at \$100.

A motion was adopted that a letter be sent to the membership appealing for voluntary contributions to the President's Fund.

The President announced his appointment of a Blue Ribbon Committee which would make a recommendation on the general question of the relationship between the Medical Society and Blue Shield. The membership of this committee is as follows: The Honorable Frank Carlson, Concordia, former governor and former United States Senator, Chairman; Mr. J. Hambleton Abrahams, Topeka, President, Security Benefit Life Insurance Company; the Honorable Edward F. Arn, Wichita, former Governor of Kansas; Mrs. Georgia Neese Gray, Topeka, former Treasurer of the United States; John L. Morgan, M.D., Emporia, former President, Kansas Medical Society; Mr. Doyle D. Rahjes, Agra, Kansas Farm Bureau; Mr. George Trombold, Wichita, Director of Public Relations, The Boeing Aircraft Company. The appointments were endorsed by the Council.

The Council adopted a motion calling for a moratorium on actions regarding Blue Shield until the Blue Ribbon Committee reports to the Society, and calling organizations and individuals within medicine to forward their complaints and recommendations to the Blue Ribbon Committee.

The Council authorized the President to appoint an advisory investigative committee on abortions.

*(Continued on page 508)*

# Medical-Legal Page

## Missouri Physician's Malpractice While Interning in Florida

In an action against a physician licensed in Missouri for malpractice allegedly occurring while he was interning in a Florida hospital, a federal trial court in Missouri ruled that the suit was governed by the Missouri statute of limitations.

In December, 1962, a patient was brought to a hospital emergency room for treatment of a compound fracture and other injuries. Later, tetanus developed and the patient suffered a condition affecting the nerve cells of the spinal cord, causing crippling and shortening his life expectancy. He alleged that the condition was a result of the physician's negligence in failing to give him tetanus antitoxin. Although the physician was not licensed to practice medicine in Florida and did not, while an intern, have the qualifications and experience for such license, he negligently treated the patient's injuries, the patient said.

The patient did not file suit against the physician until December, 1966, four years after the alleged malpractice. The physician moved for summary judgment, contending that the action was barred by the two-year Missouri statute of limitations.

The court pointed out that the alleged malpractice committed in Florida would have been barred by the Missouri statute of limitations if committed in Missouri. Therefore, the suit could not be maintained in Missouri, even though it would not have been barred in Florida. On this basis, the court rendered summary judgment in favor of the physician.—*Keaton v. Crayton*, 326 F.Supp. 1155 (D.C., Mo., Sept. 22, 1969)

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## Nonprofit Medical Service Plan Need Not Include Podiatrists

A law granting a medical service plan an option to enter into contracts with podiatrists, while giving physicians the right to contract with the plan, did not deny podiatrists equal protection of the laws, the highest court of Massachusetts ruled. The legislature had a rational basis for making the classification, and the statute did not prevent podiatrists from practicing their profession, the court said.

Seven podiatrists brought suit against Blue Shield, seeking a declaration that they were authorized to

participate in the plan as a matter of right under law. The trial court found that only registered physicians had a right under the law to participate in the plan and that the plan was not required to accept applications of podiatrists. The court also found that the applicable section of the statute did not deny the podiatrists equal protection of the laws or due process of law under either the state or the U. S. constitution.

On appeal, the court pointed out that the statute provided that a medical service plan *may* enter into contracts with podiatrists and *may* pay for their services. The statute further provided that registered physicians had the *right* to enter into an agreement with such a plan. The podiatrists contended that the medical service plan had exercised its discretionary power to exclude podiatrists in an arbitrary and unreasonable manner. They further contended that podiatrists and physicians were two similarly circumstanced classes of persons and that the statute unreasonably discriminated between them.

The court held that the legislature had the power to make a distinction between physicians and podiatrists in devising a statutory insurance framework for medical services at low cost to the public. The executive director of the plan testified that inclusion of podiatrists in the program would cause it to assume an additional financial burden in spite of lack of demand for such coverage by subscribers. This would in turn create increased rates for plan subscribers, which would not be beneficial to the public as a whole. The trial court made no specific finding regarding subscription costs but did find that there had been no significant request by subscribers to include podiatrists under the plan.

In addition to the likelihood of increasing costs, the higher court pointed out, there was a substantial difference in educational and preparatory requirements between those for a physician and those for a podiatrist. Further, the differences in scope between a physician's and a podiatrist's practice were reflected by state licensing statutes, which assigned a much more significant role to physicians than to podiatrists in protection of the public health.

For these reasons, and because of lack of public outcry to have podiatrists' services included in the plan, the court found no rational basis for making inclusion of podiatrists optional rather than mandatory. Therefore, they had not been denied equal protection of the laws. This was not a case where the law prevented podiatrists from practicing their profession, the court said. Their exclusion from the plan had not been performed in an arbitrary and unreasonable manner.—*Godfrey v.*

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*Massachusetts Medical Service*, 270 N.E.2d 804 (Mass. Sup.Jud.Ct., June 11, 1971)

### **Penicillin Allergy; Informed Consent To Heart Catheterization; Immunity Of State University Hospitals**

Liability for administering penicillin to a patient who was allergic to it could be imputed to the physician who prescribed it rather than to the subordinate medical personnel who actually administered it, a federal appellate court ruled. It also held that a patient's consent to a heart catheterization was not vitiated by a physician's failure to inform her of a 4 per cent complication factor. The court further held that University of Minnesota hospitals were immune from claims of patients.

A 30-year-old woman was admitted to a hospital for evaluation of a heart condition and possible treatment by a recognized specialist in cardiovascular surgery. A heart catheterization was part of the evaluation process. Before the catheterization, a cardiovascular surgical resident discussed the procedure with the patient and explained possible side-effects. He did not tell her there were complications in about 4 per cent of cases.

The resident performed the catheterization, although the patient later claimed she had thought the specialist was going to do it. Immediately after the catheterization, the resident found no pulse in the lower part of the patient's left leg and, after consulting with the specialist, performed another surgical procedure to determine whether there might be a blood clot or thrombosis in the left femoral artery, the site of insertion of the catheter. No clot or thrombosis was found, and the pulse returned to the leg.

The patient continued to suffer pain in her leg, and almost a month later, after the pulse in her leg became very weak and disappeared, the specialist operated on the left femoral artery, found an obstruction at the site of the incision made for the catheterization, and repaired it. It was apparent during the operation that the patient's collateral blood vessels were in poor condition and did not serve as satisfactory detours for blood flow to the lower leg. The patient complained of pain and numbness in her leg after the operation, although there was an adequate pulse in her leg.

The patient also complained of an extremely sore throat. The anesthesiologist had had to insert a tube down her throat in the course of administering the anesthetic. When the patient complained about her sore throat, the anesthesiologist allegedly said he had used too big a tube, although he later denied saying it and there was no medical evidence to that effect.

After the operation, tracheitis developed, and the anesthesiologist gave the patient a form of penicillin (Ampicillin) to treat the infection. Penicillin was given to the patient on at least 12 different days, apparently at the instructions of the specialist. The patient's hospital records from her admission for catheterization indicated she was allergic to penicillin. She said she had a skin rash on her arms and back for the two-week period she was given penicillin.

The patient had further problems with the circulation in her left leg. Finally the specialist gave her an anti-coagulant, but the condition of the leg continued to deteriorate and it became gangrenous, necessitating a below-the-knee amputation. The pathological report on her leg revealed a serious arterial disease, which the specialist later testified had caused the lack of circulation. He said the catheterization could not have caused the occlusion of the arteries to the leg, as even the smaller vessels were occluded.

The woman and her husband brought action for negligence against the hospital and physicians. The trial court directed a verdict for the hospital and physicians, and the man and woman appealed.

The patient's major claim related to the development of gangrene in her leg. She claimed the poor circulation was caused by the heart catheterization. The court held there was no medical evidence of negligence or of a reasonable connection between any act of omission by the resident and the damage the patient suffered. Under state law negligence cannot be found in a medical malpractice case unless there is expert testimony to support it. The resident was fully qualified and had performed 50 to 90 heart catheterizations himself and participated in performance of over 100. The court concluded he possessed the requisite skill and learning of an average physician in good standing in the community and had utilized that skill with proper care in the heart catheterization.

The patient also contended that the heart catheterization was assault and battery, as the resident had not informed her of the 4 per cent risk of complications. The court said that although the patient had been under the impression that the specialist would perform the catheterization, the resident had discussed it in detail with her and her husband and she had not objected to his performing it before, during, or after the operation. The court said the resident's failure to tell the patient of the 4 per cent complication factor, most of which complications were not serious, did not vitiate her consent to the procedure.

The patient argued that the specialist was negligent in failing to remove an alleged thrombus from an artery in her left leg. Although there were contradictions between the specialist's testimony and the hospital records pertaining to a thrombus, the court

held that the patient failed to establish causation and negligence, as there was no expert medical testimony and it was not within the realm of common experience and judgment of a layman. Even if there was a thrombosis, there was no medical evidence it was the cause of inadequate circulation that led to development of gangrene.

The court did find that the patient made amissible case against the specialist with regard to the administration of penicillin, because he and the anesthesiologist knew or should have known from hospital records that the patient was allergic to penicillin. The court said that although no medical evidence was offered on this point, it was within the common knowledge and experience of a layman to judge whether the drug had caused the patient's rash and whether prescription and administration of penicillin constituted negligence under the circumstances. Although the specialist had not administered the penicillin, he was liable for such administration under the doctrine of *respondeat superior*, since it was given by subordinate medical personnel at his prescription.

There was evidence that the hospital did not provide the reasonable care and attention dictated by good hospital practice. A device providing humidity for her throat condition was allowed to run dry on several occasions, and when her sister visited her on one occasion she found the patient unattended and unable to talk, breathe, or hold the oxygen mask. An emergency tracheostomy was required at that time. However, the court held that the hospital, which was associated with a state university, was an instrumentality of the state and immune from suit as a sovereign entity.

The judgment of the trial court was affirmed by the appellate court, with the exception that the case was sent back for consideration of the part of the claim relating to administration of penicillin.—*Walstad v. University of Minnesota Hospitals*, 442 F.2d 634 (C.A.8, May 10, 1971)

### Council Meeting

(Continued from page 505)

The Kansas Foundation for Medical Care was discussed. Articles of Incorporation and the bylaws were adopted as amended by the Council.

The President was authorized to appoint a committee to establish a mechanism for strengthening medicine's legislative activity.

Motion was adopted endorsing the Medicredit bill, and the President was instructed to prepare the language of this endorsement.

## Along the Bookshelf

### Clendening Medical Library

#### RECENT ACQUISITIONS

- Barnes, Cyril George. Medical disorders in obstetric practice. Oxford, Blackwell Scientific Publications, 1970.
- Behrman, Howard Taft. Common skin diseases; diagnosis and treatment. New York, Grune & Stratton, 1971.
- The best of law and medicine, '68-'70; a collection of articles reviewing the impact of existing legal rules and procedures on the practice of medicine in the United States. Chicago, American Medical Association, 1970.
- Birch, Charles Allan. Emergencies in medical practice. Baltimore, Williams & Wilkins, 1971.
- Blanzaco, André. VD: facts you should know. New York, Lothrop, Lee & Shepard, 1970.
- Bowers, Warner Fremont. Self-assessment of current knowledge in general surgery; 1,250 multiple choice questions and referenced answers derived from current surgical journals. Flushing, N. Y., Medical Examination Publishing Co., 1971.
- Brown, Kent Louis. Medical problems and the law. Springfield, Ill., Thomas, 1971.
- Davis, Hugh J. Intrauterine devices for contraception, the IUD. Baltimore, Williams & Wilkins, 1971.
- Equipment for the disabled; an index of equipment, aids and ideas for the disabled. London, National Fund for Research into Crippling Diseases, 1966.
- Ginzberg, Eli. Urban health services; the case of New York. New York, Columbia University Press, 1971.
- Goettsch, Elvira. Kidney disease in the young. Philadelphia, Saunders, 1971.
- Hansten, Philip D. Drug interactions; clinical significance of drug-drug interactions and drug effects on clinical laboratory results. Philadelphia, Lea & Febiger, 1971.
- Hardy, James Daniel. Critical surgical illness. Philadelphia, Saunders, 1971.
- Lester, William. Treatment of drug-resistant tuberculosis. Chicago, Year Book Medical Publishers, 1971.
- Lorhan, Paul Herman. Anesthesia for the aged. Springfield, Ill., Thomas, 1971.
- Matters of life and death. London, Darton, Longman & Todd, 1970.
- Noland, Robert L. Counseling parents of the ill and the handicapped. Springfield, Ill., Thomas, 1971.

(Continued on page 518)



KANSAS STATE DEPARTMENT OF HEALTH  
TOPEKA, KANSAS

Epidemiology & Disease Control Services—Registration & Health Statistics Services—Kansas Morbidity  
Incidence

Summary of Cases Reported in September, 1971 and 1970

Diseases	September			January-September Inclusive		
	1971	1970	5-Year Median 1967-1971	1971	1970	5-Year Median 1967-1971
Amebiasis .....	1	2	1	17	19	12
Aseptic meningitis .....	1	4	1	9	22	9
Brucellosis .....	—	1	—	1	2	1
Diphtheria .....	—	—	—	—	—	—
Encephalitis, prim., infect. ....	4	2	2	11	12	11
Encephalitis, post-infect. ....	—	—	—	6	—	2
Gonorrhea .....	753	668	462	5,514	5,120	3,767
Hepatitis, infectious .....	36	48	32	493	370	301
Measles (Rubeola) .....	3	—	*	1,389	69	*
Meningococcal meningitis .....	2	—	—	27	5	15
Mumps .....	36	4	*	806	143	*
Pertussis .....	—	1	—	11	3	4
Poliomyelitis .....	—	—	—	—	—	—
Rheumatic fever .....	—	—	—	1	4	3
Rubella (German Measles) .....	3	—	*	614	51	*
Salmonellosis .....	50	43	41	456	194	194
Scarlet fever .....	1	2	2	45	73	45
Shigellosis .....	39	23	16	742	78	73
Streptococcal infections .....	685	370	162	3,600	3,399	2,161
Syphilis .....	80	139	123	1,057	1,040	1,040
Tinea capitis .....	1	1	1	13	22	34
Tuberculosis .....	12	17	17	118	158	161
Tularemia .....	—	—	—	3	1	3
Typhoid fever .....	—	—	—	—	—	—

\* Statistics not available for 5-year median.

### BACKGROUND STATEMENT ON TRANSMISSION OF TOXOPLASMOSIS

Toxoplasmosis is a common disease occurring in animals and man throughout the world. It generally runs a mild course in children or adults, rarely resulting in significant complications. In adults there are often no noticeable symptoms, although in some individuals it may cause an illness resembling infectious mononucleosis or the common cold. All individuals are believed to be susceptible to initial infection with *Toxoplasma*. An estimated one-fourth of the adults in the U. S. have antibodies indicating infection at some time in their life, and are presumed to be immune to further infection.

As with rubella (German measles), a serious effect of toxoplasmosis is its ability to cause birth defects if a woman contracts the disease during pregnancy. Some studies have indicated that approximately one out of every 1,000 newborns has a positive sero-

logic test for toxoplasmosis; 1 out of 5 positive reactors show clinical signs or defects.

The causative agent of toxoplasmosis is a protozoan, *Toxoplasma gondii*. Until recently the only known method of transmission was through the consumption of raw meat products. Experimentally, however, it has now been shown that the infection can be transmitted through contact with the domestic cat. Many laboratory workers coming into contact with feces of infected cats have subsequently shown a conversion to a positive serologic test for toxoplasmosis, though none have reported clinical illness.

All reports to date agree that the cat excretes oocysts, the infective stage of the parasite, only for a short period (about 2 weeks) after the animal itself has become infected. The excreted oocysts after a 3-day period of incubation, become infective for other animals or humans. The oocysts have shown resistance

(Continued on page 516)



### JAMES H. HOLT, M.D.

Dr. James H. Holt died on October 13, 1971. He was 55.

Dr. Holt was born in Independence, Missouri, on December 18, 1916. He had resided in Wichita since his childhood. He was graduated from the Washington University School of Medicine in 1943. His internship and residencies were served at Philadelphia General Hospital, after which he served in the U. S. Army for two years.

Survivors include his wife, three sons and one daughter.

A memorial fund has been established in care of St. Francis Hospital Medical Education Department, Wichita.

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### JAMES J. MARCHBANKS, M.D.

Dr. James J. Marchbanks, 48, died November 13, 1971. He was born in Pittsburg, Kansas, and had practiced in Oakley for more than 22 years.

Dr. Marchbanks was graduated from the University of Kansas School of Medicine in 1946. His internship was served in the United States Navy.

Survivors include his wife and four children. The family suggests memorials through the Farmers State Bank of Oakley to the AMA-ERF Fund, the Heart Fund, or the United Methodist Church.



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**HERMAN E. FRIESEN, M.D.**

Dr. Herman E. Friesen, 78, who had practiced medicine in Wichita for 39 years, died September 27, 1971.

Dr. Friesen was born in Hillsboro, Kansas, on September 12, 1893. He was graduated from the University of Kansas School of Medicine in 1921, and did postgraduate work at Harvard and Mayo Clinic. After practicing at Sedgwick and Valley Center, Dr. Friesen set up his practice at Wichita in 1932.

His wife survives him.

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**BERNICE G. HAVLEY, M.D.**

Dr. Bernice G. Havley, 65, died on August 22, 1971, at the Hanover Hospital.

She was born June 14, 1906, in Greeley, Nebraska. She was graduated from the University of Kansas School of Medicine in 1938. Dr. Havley practiced medicine in Centralia since 1939.

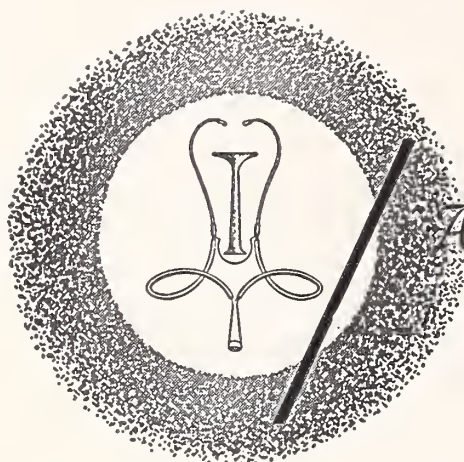
Dr. Havley is survived by one son.

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**BILLY P. SAMMONS, M.D.**

Dr. Billy P. Sammons, 43, died October 14, 1971. He was born in Hot Springs, Arkansas, and began his practice in Dodge City in 1970.

Dr. Sammons was graduated from the Tulane University School of Medicine in 1952. He is survived by two sons.



## Announcements

*Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. Notice of the session is posted in advance to allow the physician time to make preparations.*

### DECEMBER

- Dec. 4-9 American Academy of Dermatology, 30th annual meeting, Palmer House, Chicago. For information write Frederick F. J. Kingery, M.D., Secretary-Treasurer, 2250 Northwest Flanders Street, Portland, Oregon 97210.

The American College of Surgeons has announced a series of sectional meetings:

- Jan. 17-19 Sheraton-Four Ambassadors Hotel, Miami. Write: Robert Zeppa, M.D., University of Miami School of Medicine, Miami 33100.
- Feb. 14-16 Chase-Park Plaza, St. Louis. Write: T. E. McGinnis, American College of Surgeons, 55 E. Erie Street, Chicago 60611.

For further information write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver 80220.

University of Missouri-Columbia School of Medicine:

- Jan. 10 *Management of Nursing Services*
- Jan. 12-13 *Postgraduate Symposium on Practical Obstetrics and Gynecology*
- Jan. 20 *Medical Laboratory Workshop*
- Feb. 2 *Office Pediatrics*

For further information on the above courses, write the Conference Section, Continuing Medical Education, M-175 Medical Center, Columbia, Missouri 65201.

### POSTGRADUATE EDUCATION

University of Kansas:

- Dec. 6-8 *Gynecology and Obstetrics*
- Jan. 4-7 *Circuit courses* (see announcement on P. 500).
- Feb. 7-8 *Cardiac Auscultation Symposia*

For further information on the above courses write the Department of Postgraduate Medical Education, University of Kansas School of Medicine, Kansas City, Kansas 66103.

University of Colorado:

- Jan. 23 *Colorado Academy of General Practice Annual Sunday Symposium*
- Jan. 24-29 *General Practice Review*
- Feb. 7-12 *(repeat of January GP Review)*
- Feb. 14-18 *High Risk Infant Care*
- Feb. 23-26 *Surgery of the Hand*

## NEW MEMBERS

*The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.*

H. Preston Forester, M.D.  
2306 North 21st  
Kansas City, Kansas 66104

Glenn M. Gardner, M.D.  
9119 West 74th, Suite 107  
Shawnee Mission, Kansas 66204

Phillip K. Hill, M.D.  
9119 West 74th, Suite 107  
Shawnee Mission, Kansas 66204

Loren J. Humphrey, M.D.  
K. U. Medical Center  
Kansas City, Kansas 66103

John A. Morris, M.D.  
K. U. Medical Center  
Kansas City, Kansas 66103

Ronald L. Pitts, M.D.  
7301 Mission Road  
Shawnee Mission, Kansas 66208

Lowell E. Renz, M.D.  
K. U. Medical Center  
Kansas City, Kansas 66103

Donald A. Romig, M.D.  
K. U. Medical Center  
Kansas City, Kansas 66103

John W. Young, M.D.  
7301 Mission Road  
Shawnee Mission, Kansas 66208



## Kansas Press Looks at Medicine

### NOW LEGAL DRUG ABUSE?

There are indications of an epidemic of legal drug abuse that could become larger and even more threatening to society than illegal drug use.

Item:

An advertisement showing a worried-looking girl laden with books—obviously a college student.

The advertisement says her newly stimulated intellectual curiosity may make her more sensitive to, and apprehensive about national and world conditions. The ad's proposed answer to the dilemma: "To help free her of excessive anxiety . . . Librium."

The ad, in this case, is from a medical journal, but it makes a point. Doctors are strongly encouraged in the "pill-for-every-problem" syndrome by drug manufacturers.

Many of today's youth are turning to illegal drugs to escape from personal conflicts and problems, and the availability of illicit drugs is a national concern. It is ironic that the same purposes are accepted as valid and desirable when drugs are prescribed by physicians.—*Leavenworth Times*, Leavenworth, Oct. 10, 1971.

### POPULISM AND PROFESSIONS

State Sen. Harold Herd, D-Coldwater, an attorney, told a group of doctors at a political action workshop in Topeka last week that all professional peo-

ple are caught in a "new revolution," going on in this country.

Herd said professions have grown up with the attitude that every American was entitled to all the services he had money to buy, and he was told to work hard enough to be able to afford it. A new awareness and hard reality is changing all that, he added.

"We said, 'You are entitled to all the medical care you can afford to purchase,'" Herd told the doctors. He said the same was true of law.

"All that has changed. People are going to demand their new rights. They are going to demand medical care for every human being in this country and the best solution will come from you (doctors)," Herd said.

It's a perceptive word picture, and sound advice.

It addresses itself to any lawyer who thinks indigents should fend for themselves in the courts; to any doctor who wants to keep medical care a privilege; to all educators and theologians who want to keep their institutions as private clubs and to all newsmen who take the word of officialdom as the gospel and think anyone who questions that word is a nut.

Herd warned that delaying actions by the professions will hurt the professions, not help their causes. He said change is necessary, and the best change can come from within.

Agreed.—*Olathe Daily News*, Olathe, Oct. 14, 1971.

### MOVING?

*When you change your address, be sure to notify the JOURNAL, preferably one month in advance. In that way, you'll get every issue on time. Simply print your name, old address, and new address, on a postal card and send to: THE JOURNAL OF THE KANSAS MEDICAL SOCIETY, 1300 Topeka Avenue, Topeka, Kansas 66612.*



# This "case history" runs to some 10,000 pages

This is a typical "case history" of one new drug — or, rather, a proposed new drug — assembled for submission to the U.S. Federal Food and Drug Administration. These volumes are the result of several years' work by thousands of professional and skilled personnel in just one pharmaceutical company's research laboratories, and by hundreds of physicians in medical schools, hospitals, and private practice. They cover every aspect of experience with this proposed new agent from chemical laboratory to clinic, from mouse to man. Each volume could conceivably represent hundreds of thousands of dollars of financial invest-

ment, countless hours of human effort. This veritable mountain of data stands behind every new agent offered to you by pharmaceutical manufacturers — a reassuring testimonial to the efficacy, safety and purity of the drugs you will prescribe today to lower the cost of disease to your patients.



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This message is brought to you as a courtesy of this publication on behalf of the producers of prescription drugs.





## *Personalities*—IN KANSAS MEDICINE

Joyce R. Sumner, Hutchinson, has been elected Assistant Secretary of the American Society of Anesthesiologists.

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At the recent meeting of the American Fracture Association in Guadalajara, Mexico, Charles K. Wier, Wichita, presented a paper and an exhibit on the history and use of the intramedullary nail in long bone fractures.

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Russell J. Eilers, Kansas City, professor of pathology and director of the clinical laboratories at the University of Kansas Medical Center, has been named Pathologist of the Year by the College of American Pathologists. The award, given each year, is for outstanding contributions to the advancement of pathology.

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Doctors and wives enjoyed the Jayhawk Scandinavian Postgraduate Course in various countries. Among those participating from Kansas were Fount K. Hartley, Wichita; Jesse D. Rising, Kansas City; John P. White, Parsons.

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D. Cramer Reed, Wichita, has been named as dean of the Wichita Branch of the KU School of Medicine. Dr. Reed is currently Dean of Wichita State University's College of Health-Related Professions and Associate Dean at KUMC.

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William Nice, Topeka, has been nominated for the British Royal Fellowship in the Royal Society of Health, England.

---

A Scott City physician, Galen W. Fields, is currently serving a stint on the United States hospital ship, HOPE, stationed at Kingston, Jamaica.

Richard R. Brummett, Neodesha, attended the Scientific Assembly of the American Academy of General Practice in Miami recently.

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At a meeting of the Fort Hays Chapter of Dames Club, William M. Kane, Hays, was the featured speaker. He answered questions on pregnancy and prenatal care.

---

Victor E. Watts, Smith Center, was featured in the Star-Free Press, Ventura County, California, recently.

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Attending a Scientific Assembly for the American College of Emergency Physicians in Miami Beach was Lester R. Kirby, Anthony.

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Porter M. Clark, Independence, has announced his retirement after 38 years of practice. He came to Independence in 1933.

---

Kansas Division, American Cancer Society, has re-elected Ernie J. Chaney, Belleville, to the Board of Directors.

---

William E. Mowery, Salina, was elected president of the Kansas Chapter of the American College of Physicians at a meeting in Emporia.

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As the special speaker at the dinner meeting of the Business and Professional Women's Club was Frederick J. Moe, Hutchinson.

Wesley H. Hall, Girard, attended the annual Scientific Assembly of the American Academy of General Practice in Miami Beach.

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A paper on "Colon Carcinoma" was presented by **Robert G. Rate** at the meeting of the Kansas Chapter of the American College of Surgeons at Emporia.

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**Kellogg F. Bascom**, Manhattan, was the featured speaker at a meeting of the Manhattan Woman's Club recently. The topic of his presentation was, "Cancer—Its Nature and Treatment."

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"Sickle Cell Anemia Disease" was the subject of a talk presented by **Porter E. Barbera**, Independence, at a meeting of the Registered Nurses Club.

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**Robert E. Banks**, Paola, has been named a member of the Advisory Council for Adult Education.

---

**Lloyd W. Hatton** and **Gordon E. Maxwell**, Salina, participated in a recent seminar on abortions.

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The Atchison NEKA Vo-Tech Advisory Council, of which **Wayne O. Wallace**, Atchison, is a member, met recently to discuss procedures in the course.

---

**William J. Reals**, Wichita, was installed as president of the College of American Pathologists at their annual meeting on October 29, in Boston. He begins a two-year term as president of this national medical specialty association with more than 5,600 members.

---

Governor Docking has announced his reappointment of **Clarence H. Benage**, Pittsburg, to another four-year term on the Advisory Hospital Council of the Kansas State Board of Health.

---

**Robert P. Woods**, Topeka, has recently addressed the Kansas Claims Association convention.

---

American College of Physicians, meeting in Salina recently, has named **Albert E. Bair**, Independence, its president-elect.

## Morbidity Incidence Report

*(Continued from page 509)*

to most laboratory disinfectants, and under favorable environmental conditions might remain viable for as long as a year. The survival of oocysts under actual environmental conditions has not yet been studied, and the extent to which they are disseminated naturally and by what means is not known.

Because of the possibility of infection of a pregnant woman with toxoplasmosis through contact with cats and/or raw meat, there are several points which should be considered by those who are responsible for prenatal counseling and care of patients.

There is available a serologic test for *Toxoplasma* antibodies, which, when employed, should be performed as early in pregnancy as possible. (A number of State Health Department, hospital, and commercial laboratories have the capability of performing such serologic tests.)

If the patient is serologically positive with a low titer, she may be presumed to be immune to *Toxoplasma*, and therefore incapable of transmitting the disease to her unborn child. However, if the initial test shows an unusually high titer, the possibility of a recent infection exists, and a second specimen should be tested.

If the patient is serologically negative, she should be retested later in her pregnancy for possible signs of infection, and the infant might be tested at birth. Meanwhile, she should be advised to avoid eating raw meat or associating closely with cats during her pregnancy. If there are cats in the home, someone other than the expectant mother might be assigned to the task of emptying the litter box. (Since the *Toxoplasma* oocysts do not become infective until 3 days after they are excreted, daily disposal of the litter would provide additional protection.)

If a woman does acquire toxoplasmosis during pregnancy, her physician may elect to treat her with a combination of pyrimethamine and triple sulfas, with full recognition of its possible side effects. He may suggest abortion if the infection occurs during the first trimester. Until more definitive information is obtained, treatment must be determined on the basis of the individual case.

Studies will continue at the Center for Disease Control and elsewhere to obtain more definitive answers as to the mode of spread and thus the most appropriate measures to prevent occurrence of toxoplasmosis among women who are pregnant. Meanwhile, it is well to recognize that cat-to-human transmission of toxoplasmosis is at least a factor to be considered by medical and public health professionals in pre-natal and post-natal care.



# Woman's Auxiliary

## *Annie Turns InnoModiSynthiDreRepPlanChalPracticalizer*

If you were to describe yourself in terms of an active creative human being, how would you do it? Would you say that you were a challenger, i.e., a person who is discontent with what is happening all the time and says so? If so, would you have ideas to replace those in existence?

Or would you term yourself a modifier, one who takes existing plans and makes them work with certain modifications? Would you be a dreamer, maybe, or an innovator? Or would you like the idea of being a synthesizer or a practicalizer? . . . Those last two sound like some kind of parts for a computer, don't they? . . . Does the word repeater mean anything to you other than a type of rifle?

If any of this makes sense, you will know that Annie is talking about behavioral concepts as they apply to one's creativity and whether their motivation is directed towards society or towards themselves.

Assuming that these eight categories of behavioral patterns are not all black and white, but also have shades of gray, one can pinpoint almost anyone or any member of an organization, including that old standby, your medical society.

Where did Annie come up with all this profound knowledge? At the Chicago Fall Conference for auxiliary members, that's where.

"Here go those women again," you groan, "Off on another tangent." Well, maybe. But it never hurts to take inventory of one's self, particularly if you don't like what you find.

We did other things at Fall Conference too, like learning the latest on legislation, international health projects, health education projects and membership. Membership! There's that word again. It always triggers Annie's built-in recording made to nag lagging auxiliary participants . . . "ISYOURWIFEAMEMBER, ISYOURWIFEAMEMBER, ISYOURWIFEAMEMBER?" In other words the conference wasn't all a self-analysis thing, but it does happen to be what Annie chooses to talk about at the moment.

Assuming there are eight categories of member types, the repeater (not the rifle, now, boys), the challenger, the dreamer, the innovator, modifier, planner, synthesizer and practicalizer, one takes these personality types and divides them into "Inner and outer directed" people. Then, by answering a list of approximately 50 questions (and some of

them rather personal ones, too), one can score oneself, or anyone else that will answer the questions, as to the amount of creativity one has and whether or not you are an inner or an outer directed person. This is easy to do, as all even numbered questions score one aspect and the odd numbered ones score the other. By placing your scores on a graph after adding up all the points and doing some simple arithmetic, then taking a vector of the two, one comes up with the kind of personality type you are supposed to be.

What good does all this do? Mainly it points out that each type of person has something to offer to an organization. The planner, for instance, can clearly show people in which ways they might move. However this person is not action oriented and is low in taking risks, so someone else will have to do the moving. Like the synthesizer, for instance, and he in turn is more action oriented and more creative than the modifier. Much of the synthesizer's work in organization is taking other people's ideas, adding some and making them fit existing situations. His organizational strength is often in carrying out plans in brilliant ways. His weakness is that these ways are often less tested than the modifier's and therefore are more risky.

The innovator scores high on ideas and creativity, some of which are workable. Yet he is apt to take risky ideas just for the fun of it, when older, more tried ideas would have done as well or better. But at least this person has some ideas to back up his discontent with the way things are going, unlike the dreamer who sits and dreams through a meeting and then goes home and says "If I were president, I'd have. . . ."

What does all this boil down to? Mostly that each type of person is needed in every organization to give it a proper balance. When one factor outweighs the other, then the organization doesn't function well. It is a way to analyze yourself or any group with whom you associate, to help be more effective, since if you know what type person someone else is, you can use them to the best advantage. Large companies have been using this system successfully for a long time. If you'd like to know where to find out more . . . just ask Annie.

What personality type is your Annie? Why, she's the ever-lovin', doctor-addicted (to her own, anyhow) auxiliary type. It's not on the chart in exact-

ly those words, but it's there. Other than that, she isn't saying. *You* figure her out, then ask her and she'll tell you if you are right.

And you might try the system out on your own bunch . . . it's almost as much fun as charades.

Yours for the Practical Application and Repetition and Modification of Any Dream Innovated That Challenges and Synthesizes the Plan! And if that doesn't cover the situation, nothing does.

Auxiliary Annie

## The Diagnostic Value of Mediastinoscopy

(Continued from page 497)

12. Harken, D. E.: A simple cervicomedial exploration for tissue diagnosis of intra-thoracic disease. *New Eng. J. Med.* 251:1041-1044, 1954.
13. Kirschner, P. A.: Mediastinoscopy. *J. Mount Sinai Hosp. N. Y.* 34:559-573, 1967.
14. Leckie, W. J., et al.: The case against routine scalene node biopsy in bronchial carcinoma. *Lancet* 1:853-854, 1963.
15. Lui, A. H.: Bilateral inferior deep cervical (scalene fat pad) and paratracheal lymph node biopsies. *J. Thorac. Cardiovas. Surg.* 40:90-92, 1960.
16. Nohl, H.: *The Spread of Carcinoma of the Bronchus*. London, Lloyd-Luke, Ltd., 1962.
17. Nohl-Oser, H. C.: Mediastinoscopy. *British Med. J.* 5443:1167-1168, 1965.
18. Pearson, F. G.: An evaluation of mediastinoscopy in the management of presumably operable bronchial carcinoma. *J. Thorac. Cardiovas. Surg.* 55:617-626, 1968.
19. Pearson, F. G.: Mediastinoscopy: a method of biopsy in the superior mediastinum. *J. Thorac. Cardiovas. Surg.* 49:11-21, 1965.
20. Radner, S.: Suprasternal node biopsy in lymph spreading intrathoracic disease. *Acta Medica Scandinavica* 152:413-415, 1955.
21. Reynders, H.: Mediastinoscopy in bronchogenic cancer. *Dis. Chest* 45:606-611, 1964.
22. Van Der Schaar, P. J., and van Zanten, M. L.: Experience with mediastinoscopy. *Thorax* 20:211-214, 1965.

## Along the Bookshelf

(Continued from page 508)

- Petty, Thomas L. Intensive and rehabilitative respiratory care; a practical approach to the management of acute and chronic respiratory failure. Philadelphia, Lea & Febiger, 1971.
- Plank, Emma N. Working with children in hospitals; a guide for the professional team. Cleveland, Press of Case Western Reserve University; distributed by Year Book Medical Publishers, Chicago, 1971.
- Rorvik, David M. Brave new baby; promise and peril of the biological revolution. Garden City, N. Y., Doubleday, 1971.
- Scheie, Harold G. Ocular manifestations of systemic diseases. Chicago, Year Book Medical Publishers, 1971.
- Stevenson, Ian Pretymann. The psychiatric examination. Boston, Little, Brown, 1969.

Swidler, Gerald. Handbook of drug interactions. New York, Wiley-Interscience, 1971.

Thomas, J. H. Blood disorders in the elderly. Bristol, Wright, 1971.

Wells, Charlotte G. Cleft palate and its associated speech disorders. New York, McGraw-Hill, 1971.

Wicka, Donna Konkel. Advice to parents of a cleft palate child. Springfield, Ill., Thomas, 1970.

Wing, Lorna. Children apart; autistic children and their families. London, British Medical Association in conjunction with the National Association for Mental Health, 1970.

Zohman, Lenore R. Cardiac rehabilitation. New York, Grune & Stratton, 1970.

## ADOPTED CHILDREN

Adopted children have the real need for knowledge concerning their ancestry, and adoptive parents of these children should discuss with them honestly and straightforwardly vital aspects of their ancestral background in order to reduce the anxiety inherent in this area of identity formation.

These recommendations concerning identity development in adopted children were made by the Committee on Adoptions of the American Academy of Pediatrics.

The Academy Committee on its statement emphasized that determining identity is a difficult process for someone brought up by his natural parents. This becomes even more complex for the individual whose ancestry is unknown to him.

The Committee also pointed out that at some point the child learns that he is adopted and begins to seek out the facts and their meaning. Many adopted children become aware of the fact that they may have been born out of wedlock. Sensitive children frequently express strong feelings about their own status and the character of their natural parents.

There is ample evidence that the adopted child retains the need for seeking his ancestry for a long time, the Academy statement emphasized. Adopted children frequently make a request to their parents or pediatrician for more information on their origin. The struggle with this problem may reach its peak in adolescence and, in the extreme, result in running away in search of real parents.

The need for knowledge of ancestry may go unrecognized, or it may be suppressed by both the parents and the child. Parents should discuss with the child aspects of his background. An honest and straightforward exchange will do much to reduce the anxiety inherent in this area of identity formation, and such an exchange should be encouraged and assisted by the pediatrician.



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